REPORT of the AUDITOR GENERAL to the NOVA SCOTIA HOUSE OF ASSEMBLY

June

Highlights

105-05584/

REPORT of the AUDITOR GENERAL to the NOVA SCOTIA HOUSE OF ASSEMBLY

HIGHLIGHTS

PREFACE

Under Section 9A(1) of the Auditor General Act, I have the mandate to report annually to the House of Assembly and may make, in addition to any special report, not more than two additional reports in any year. The deadline for the Annual Report is December 31.

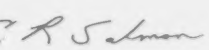
This Report includes the results of audit work completed from December 2004 to May 2005.

In an attempt to give readers an appreciation of the most significant findings contained in my June 2005 Report, I publish this highlights volume. It provides a brief summary of the results of audit work carried out to date in 2005.

However I do suggest that those who wish a fuller understanding of any or all of these matters should refer to the full Report. The highlights volume notes the page numbers of the full Report for each of the subjects.

Again this year we have set out our recommendations to government in each Chapter. To assist readers we have also included all 42 recommendations in this highlights volume. I hope this is useful.

It is also the intent of myself and my staff to provide our messages as clearly and concisely as possible. Comments from readers on the value of this highlights volume or on the complete Report would be welcomed.



E. ROY SALMON, FCA
Auditor General

Halifax, Nova Scotia
May 27, 2005

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INTRODUCTION

Message from the Auditor General
Pages 3 - 4

1.1 The objective of this Report is to provide information to the House of Assembly on a more timely basis and allow the Public Accounts Committee to consider these matters and call witnesses on a more timely basis. Discussions with members of the Committee indicate they favour this approach.

1.2 Consistent with one of the major priorities outlined in my 2005 *Business Plan*, some of the audits focus on specific program areas as opposed to higher-level departmental matters. I would welcome comments on the more in-depth focus of the program audits. I would also like to express my appreciation to my staff for their efforts in producing this Report, and adapting to this change in priorities and timelines.

GOVERNMENT-WIDE ISSUES

Government Financial Reporting
Pages 6 - 19

2.1 The Auditor General's opinion on the government's 2005-06 revenue estimates was qualified because the revenue estimates are not presented on the same consolidated basis as the Province's consolidated financial statements. It was tabled April 26, 2005 as part of the *Nova Scotia Budget* publication (page A2). A management letter on this year's review was issued to government in May 2005.

2.2 Our audit of the Province's March 31, 2005 consolidated financial statements will be completed between May and September 2005.

The target deadline for providing our opinion on those statements, for printing purposes, is September 22, 2005. The scheduled date assumes year-end accounting and audit readiness requirements are met.

2.3 Additional appropriations of $99,017,194 for 2003-04 program expenses were approved on December 3, 2004 by Order in Council 2004-469. No special warrants have been approved since our last Report. Based upon forecast information included in the 2005-06 budget document, additional appropriations of approximately $222.2 million may be required for 2004-05.

2.4 In order for the Province to issue debt in the United States market, government must file an Annual Report (Form 18K) with the U.S. SEC. This report is supposed to be updated annually by December 31. At the time of writing this Report, the Province's Form 18K had not been updated since December 2003.

2.5 We acknowledge that government made amendments to the presentation of the surplus amounts in the 2005-06 budget documents to ensure they are GAAP compliant. We support Finance's plan to review the content of government's financial reports to ensure they meet the needs of their users. These actions contribute to the quality of government's financial reporting.

2.6 Our recommendations to government from this chapter and the revenue estimates management letter are as follows:

Recommendation 2.1

We recommend that the development of the economic assumptions and estimated revenues for each revenue line item be completed after the Executive Council has approved planned revenue and spending decisions for the coming year. The impact of those decisions should be specifically incorporated into the development of the economic assumptions and the revenue line items.

Recommendation 2.2

We recommend the effective date of the economic assumptions be the date they are approved by the Executive Council.

Recommendation 2.3

We recommend all key economic assumptions used in the development of the revenue estimates be approved by the Executive Council.

Recommendation 2.4

We recommend that, in accordance with GAAP, Federal transfer payments be included in revenue as opposed to being netted against expense appropriations.

Recommendation 2.5

We recommend the budget process be reviewed and revised to ensure there is proper cut off of information and that the revenue estimates reflect the most current information available.

Recommendation 2.6

We recommend the budget process be reviewed and revised to ensure Finance is made aware of

all potential revenue line items so the Department can assess relevant information when determining the Province's estimated revenues and related disclosures.

Recommendation 2.7

We recommend government take steps to ensure the necessary resources and processes are in place to ensure the Province's annual SEC Form 18K report is filed as required on a timely basis.

Government Systems and Controls

Page 20 - 30

3.1 Good systems and controls can be costly, while too many or less than optimized controls can also be costly. Government's challenge is to ensure that the risks of loss or misuse are appropriately identified and that decisions made about the level of control to be in place appropriately mitigate risks on a cost-benefit basis. The goal is not more or too many controls, but rather cost-effective optimization of control against risks.

3.2 The government has a number of significant systems and control initiatives in process at this time. The capacity of existing resources assigned to such initiatives needs to be monitored effectively in order to achieve successful results and outcomes.

3.3 The first independent service audit of the SAP Customer Competency Centre of the Department of Finance, reported in January 2005, contained a reservation of opinion.

3.4 The results of the annual independent service audit of control procedures in place for processing on government's large mainframe computer systems provide reasonable, but not absolute, assurance on the adequacy of controls. The audit deals with control procedures at a specific point in time, and only those that are the responsibility of the contracted service organization. There are significant matters not covered by the audit which are government's specific and direct responsibility.

3.5 Better reporting to the House of Assembly in regards to annual business planning information and accountability reporting on the Industrial Expansion Fund is required.

3.6 We reviewed the second edition of the *Business Climate Index* (Index), published for 2003, in which Nova Scotia ranked fourth. We selected a sample of the indicators, to determine whether the Index reflected the underlying Statistics Canada data. We noted no issues with the sample indicators.

3.7 The information on tangible capital assets in government's corporate financial management system (CFMS) is not always updated in a timely manner for asset transfers from one department to another or for disposal of an asset.

3.8 Our recommendations to government from this chapter are as follows:

Recommendation 3.1

We recommend government assess the adequacy of its own control procedures associated with data processing service provider arrangements.

Recommendation 3.2

We recommend that annual business planning information and accountability reporting on the Industrial Expansion Fund be made available to

the House of Assembly on at least the same basis as such information is currently available on other crown entities.

DEPARTMENT AUDITS
• • Education

Special Education
Pages 32 - 64

4.1 Implementation of the Special Education policy began only ten years ago. The Department of Education and Regional School Boards (RSBs) still encounter challenges on a daily basis to ensure that students that most need Special Education services are receiving the supports they require to succeed. The demand for Special Education services is high and program costs are increasing. Not every identified need can be met. In this environment, prioritization processes are very important and should be based on appropriate, reliable information about demand, services offered, educational outcomes and costs.

4.2 The Department of Education's Student Services Division attempts to collect information on programs and outcomes. However, there are no formal systems in place to generate this information. The information is primarily collected by annual surveys. The *Tracking Our Progress* survey is a positive initiative because the RSBs and schools undertake a comprehensive self-assessment of Special Education. However, the information provided is not verified and is sometimes incomplete.

4.3 We are concerned with the overall quality of the financial and student specific information available to management for the Special Education program. For example, we could not determine all direct costs of offering Special Education programs at the RSBs audited, or the number of students waiting for services. Information that is accurate, timely and complete is essential to effective decision making and improvements are needed. Better quality information should enhance the business planning process and enable both the Department and RSBs to assess the needs of Special Education students and make better decisions with respect to meeting those needs.

4.4 The roles and responsibilities with respect to Special Education programs and services are well documented. There are clear lines of accountability and roles with respect to Special Education programs and services are understood.

4.5 Neither the Regional School Boards (RSBs) nor the Department have readily available information on all students and special education services provided to them to enable performance measurement and assist in decision making. We acknowledge that this information is available at the school level and that RSBs and the Department are able to request it. The Department and the RSBs should analyze information needs for Special Education and collaborate in the development of a Province-wide student information system.

4.6 The Department of Education requires RSBs to prepare comprehensive annual reports on the Severe Learning Disabilities Program and the Reading Recovery Program. These include information on models of service delivery, student numbers, results of standardized testing and satisfaction surveys. This requirement should be extended to all major Special Education programs and services.

4.7 The Department requires RSBs to conduct annual surveys of compliance with policies at

the school level. There is little verification of information reported due to the small number of staff in the Student Services Division at the Department. Also, at the RSBs, there is no formal independent review of the allocation of teaching assistants to students within individual schools. The Department and RSBs should consider conducting more reviews for verification of compliance and sharing of best practices, similar to the Department's review of the Annapolis Valley Regional School Board in 1999.

4.8 The RSBs indicated that the issue of liability for performance of medical procedures by Teaching Assistants is a concern. The Department of Education has provided policy guidance to the RSBs with respect to the performance of medical procedures and related training requirements. The guidance suggests that RSBs work with the District Health Authorities to establish protocols to be followed.

4.9 The guidance with respect to how Regional School Boards should account for Special Education expenditures is not clear or complete which limits comparability of financial statements and results in a likely understatement of total costs of Special Education. The Department of Education should improve its guidance to RSBs regarding accounting for Special Education expenditures. A direct costing model should be adopted to ensure that all significant Special Education costs are being appropriately identified, classified and reported on a consistent basis at all Boards.

4.10 Our recommendations from this audit are as follows:

Recommendation 4.1

We recommend that all RSBs conduct regular evaluations of Special Education programs with input from all stakeholder groups to serve as a basis for planning and performance reporting.

Recommendation 4.2

We recommend the Department and RSBs analyze information needs for Special Education and consider the development of a Province-wide student information system to accumulate and report data.

Recommendation 4.3

We recommend that the Department of Education require RSBs to prepare a comprehensive annual report on the performance of all major Special Education programs. The annual report should be made available to stakeholders including the Department, parents, and members of the House of Assembly.

Recommendation 4.4

We recommend that the Department and RSBs reestablish the practice of conducting peer reviews of RSBs for verification of compliance with legislation, regulations and policies and sharing of best practices.

Recommendation 4.5

We recommend that government review and update the Education Act and related regulations to ensure that they reflect the current funding environment.

Recommendation 4.6

We recommend that the RSBs negotiate with the District Health Authorities to establish a documented protocol with respect to the performance of medical procedures. Where the procedures are to be performed by teacher assistants, related training needs should be addressed.

Recommendation 4.7

We recommend that the Department of Education improve its guidance to RSBs regarding accounting for Special Education expenditures to specifically describe which costs can be charged and how they are to be calculated. A direct costing model should be adopted to ensure that all significant Special Education expenditures are being appropriately identified, classified and reported on a consistent basis at all Boards.

• • Finance

Pension Administration System (PenFax)
Pages 65 - 79

5.1 We have reported on the Penfax system implementation problems in the past. Although we repeat our concerns expressed in the previous Reports, this Report indicates that the system, as implemented, is functioning in a controlled manner, though improvements should be considered by management.

5.2 Further we note that the expenditures on the Penweb element, approximately $1 million, have achieved little or no benefit.

5.3 There are important lessons to be learned - some of them fairly expensive - by the Department of Finance and government overall from the Penfax implementation. We urge government to ensure that the lessons learned are appropriately documented so that future system implementations can benefit.

5.4 The controls for the general computer environment for the Penfax system were assessed as being adequate. There are some areas where improvements should be made.

5.5 The controls over completeness, accuracy, authorizations and the adequacy of management trails were assessed as being adequate. There are some areas where improvements should be made.

5.6 As the Penfax Completion Project final report is still in progress, we have not had an opportunity to review the final assessment of the deliverables of the Completion Project. We have recently been informed by management that the cost of the Penfax Completion Project was $378,911.

5.7 The cost of the Penweb component, which was added to the original Penfax project scope in December 2001 (i.e., at a time when that project was already in trouble), was approximately $1,000,000. This does not include the cost of Department of Finance Pension Services Group (PSG) staff working, often full time, on this project. The Penweb component was not completed and implemented. The government and the pension funds have received little or no value for the money expended on this element of the project.

5.8 Our recommendations from this audit are as follows:

Recommendation 5.1

We recommend that the PSG establish and test an appropriate disaster recovery plan for the

Penfax system. This should include service level agreements with entities external to the PSG.

Recommendation 5.2

We recommend the establishment of a policy requiring departments to have an appropriate business continuity plan, and that this plan be kept up-to-date. Further, we recommend the establishment of an initiative to undertake the development and implementation of a corporate business continuity planning process.

Recommendation 5.3

We recommend that, in conjunction with the development of a corporate business continuity planning process, the Business Technology Advisory Committee (BTAC) examine the needs for a corporate disaster recovery planning process, as it relates to the provision of information technology services.

Recommendation 5.4

We recommend that PSG management enter into appropriate service level agreements with the Resources Corporate Services Unit.

Recommendation 5.5

We recommend that management periodically review security matters surrounding the Penfax system.

Recommendation 5.6

We recommend that the PSG develop security and privacy policies and communicate these to staff. The signing of a security and confidentiality agreement by employees should be an integral component of these policies.

Recommendation 5.7

We recommend that a sign-off procedure for file reviews be designed and implemented. A check list could be inserted into the member file noting review procedures with sign-off required when the work is completed.

Recommendation 5.8

We recommend that PSG management continue with its data integrity initiatives and contact with employers to prevent errors from occurring in the pension source data.

Recommendation 5.9

We recommend that data transfer procedures between employers and PSG be standardized, to meet the requirements of the Penfax system, and that employers be accountable for data accuracy.

• • Health

Nova Scotia hospital Information System (NShIS) project

Pages 80 - 105

6.1 The level of assurance provided on the findings and conclusions in this chapter is less than for an audit (i.e., a review provides moderate assurance while an audit provides high assurance). This is because of the type of work we performed. Our evidence was based on management representations and review

of applicable documentation. We did not test controls in place at the various sites visited.

6.2 The NShIS project has many benefits, both medical and financial. Before the benefits can be achieved, 6000 professional and other staff will change and standardize the way their daily activities are completed and 3000 nurses will change and standardize nursing practices. Physicians will also benefit from the system.

6.3 The duration of implementation will exceed the planned schedule. As pointed out by external parties, the implementation schedule was aggressive. The Nova Scotia experience was the first jurisdiction-wide, multi-hospital implementation in North America where separate governing bodies (i.e., multiple DHAs) were involved. We concluded that the project management techniques used were consistent with best practices.

6.4 DHA management and users have expressed high levels of satisfaction with the system and its benefits.

6.5 In March 2001, the Department of Finance informed DOH of the opportunity to use newly available capital funds *"so long as we can purchase and receive product by the end of this fiscal year"*, three weeks away. Four days later, the Business Technology Advisory Committee (BTAC) and the Department began negotiations to acquire the hospital clinical information system pursuant to a request for proposals (RFP) process concluded in late 1999. On March 30, 2001 the Deputy Minister signed the supplier purchase agreement, amounting to approximately $20 million for hardware and software. We are concerned that this very tight timeframe may have impacted the decision to proceed with the results of the 1999 Request for Proposals rather than enter into a new RFP. We understand that the results of the 1999 RFP had undergone an extensive review process and that DOH wanted to move forward with a system that already had the support of the DHAs.

6.6 We examined the project management methodology used by the project manager and compared it to the Project Management Institute's *A Guide to the Project Management Body of Knowledge* (PMBOK Guide, 2000 Edition). The project management methodology was consistent with the PMBOK. Although not all documentation was in the exact form suggested by the PMBOK, the methodology applied addressed key PMBOK areas.

6.7 The development of Province-wide practice standards was necessary for the project to succeed. This was a significant task as the result needed to be that all functional units within hospitals in the Province would capture the same data and document patient-related activities in a consistent and comparable way. The standards changes played a major role in the problems which surfaced at the first patient care system module implementation (DHA 7 regional hospital). Lessons learned from that experience have been incorporated in the remaining implementation plans and activities.

6.8 There have been reductions in the scope of the project due mainly to issues which were not anticipated in the planning phase. For example, the Patient Care System (PCS module) likely will not be fully implemented by all sites at the conclusion of the project, and there are still issues associated with when physicians will have remote access from their offices. The PCS module has been implemented in 6 of the 34 hospitals. A revised implementation strategy has been developed resulting in extending implementation timing into 2007. Additional

funds will be required for related computer equipment. However, the costs of the software and estimated training are included in the NShIS budget.

6.9 Management indicates security and confidentiality of patient information and records, and system backup and recovery have been addressed, but NShIS data center disaster recovery plans should be formalized and tested.

6.10 The ability of the three hospital information systems (IWK Health Centre, Capital District Health Authority and NShIS) to communicate and share information formed part of the objective for the NShIS. This issue is now being addressed separately as the approach has broadened to include more health systems than just the NShIS. Partial implementation is planned for the summer of 2005.

6.9 Our recommendation from this audit is as follows:

Recommendation 6.1

We recommend the disaster recovery plans and procedures for NShIS be formalized and tested.

Audit of Performance Indicators

Pages 106 - 112

7.1 Over the past several years, much has been said and written by others on the need for better health information and reporting of outcomes. The Department of Health has taken steps to achieve this including issuing *A Measure of Our Health and Health System* and engaging our Office to provide an opinion on the report. Our audit provides assurance to the reader on the quality of the data.

7.2 We were able to give an unqualified opinion on the indicators reported by the Department of Health in the November 2004 publication, *A Measure of Our Health and Health System*. We are encouraged by the work undertaken by the Nova Scotia Department of Health in the preparation of that report.

7.2 We were also requested by the Department of Health to undertake additional audit work related to three specific performance measures, not included in *A Measure of Our Health and Health System*, that originate from Provincial systems. We were only able to conclude that systems are adequate to produce data which is complete and accurate for one of the three measures audited. The Department of Health is planning to work with the responsible entities to make improvements to the processes for collecting data for the other two indicators.

• • Natural Resources and Transportation and Public Works

Fleet Management

Pages 113 - 137

8.1 Fleet management in the Nova Scotia government is not coordinated across the Provincial fleet. Each government department is responsible for the management of any fleet assets employed. Detailed information on the composition and operation of the entire Provincial fleet is not readily available.

8.2 There is limited coordination of fleet operations between Transportation and Public Works (TPW) and Natural Resources (DNR). We identified opportunities to promote economy, efficiency and control over government fleet operations by improving the level of coordination between

the two Departments in areas such as policy development, information systems, acquisitions, disposals and fleet maintenance.

8.3 The management information system in TPW is adequate to provide management with information needed to manage the Department's fleet. We were unable to conclude on the adequacy of the DNR systems due to lack of Department knowledge of systems and absence of related documentation. We noted under-utilization of data gathering, reporting and other capabilities of the management information systems in both TPW and DNR.

8.4 Acquisition of fleet assets at TPW and DNR generally complied with existing legislation, regulations and policies.

8.5 We were unable to obtain sufficient, appropriate audit evidence to conclude on whether there is due regard for economy and efficiency in fleet asset acquisition and disposal practices at the Departments. There is insufficient analysis and documentation to support decisions.

8.6 We were unable to conclude on whether there was due regard for economy and efficiency in the maintenance and operation of fleet assets in TPW and DNR due to deficiencies in fleet management systems, analysis and documentation. We noted incomplete vehicle log books, vehicles without log books, inadequate maintenance schedules and records, incomplete information on distance driven, and incomplete warranty information. We also observed instances where routine maintenance was performed long after it was due according to maintenance schedules.

8.7 In DNR, we identified approximately $45,000 in expenses which were inappropriately charged

to fleet operations. We were advised that staff had been instructed to charge these expenses to fleet operations due to availability of unspent budget allocations for the year. Such accounting practices do not provide for accurate financial reporting and are inappropriate.

8.8 We identified instances of non-compliance with the Provincial regulations related to fuel storage and instances of non-compliance with the Provincial procurement policy.

8.9 TPW has completed environmental site assessments on two-thirds of its estimated 80 base locations and identified environmental contamination on almost all of the sites assessed. An action plan to remediate the environmental contamination has not been prepared and the cost of clean-up has not been estimated. DNR has not had its fuel storage locations assessed for environmental contamination.

8.10 Controls over fuel expenses and fuel consumption in TPW and DNR are inadequate to ensure due regard for economy and efficiency. We found that some divisions analyze and monitor fuel expenses, while others do not. The Departments cannot assure that all recorded fuel expenses are incurred for government-related activities, and there are inadequate measures to detect excessive fuel usage due to poor operating and maintenance practices.

8.11 Our recommendations to government from this audit are as follows:

Recommendation 8.1

We recommend that Transportation and Public Works and Natural Resources investigate ways of coordinating their fleet management operations in order to promote economy and efficiency. In doing

so, consideration should be given to including fleet operations of other government departments and agencies.

Recommendation 8.2

We recommend that the Department of Natural Resources' fleet management branch review and assess its current information needs and evaluate the ability of current systems to meet them. The Department should also assess the need for additional staff training in fleet management systems and practices.

Recommendation 8.3

Government should review the policy on acquisition of fleet assets and assess the reasonableness of the $25,000 limit and/or clarify the application of the limit to the different vehicles employed in Provincial fleet operations.

Recommendation 8.4

We recommend that acquisition and disposal decisions be better documented in both Departments, and be based on analysis of the best means of meeting operational needs.

Recommendation 8.5

We recommend that life-cycle costs, environmental performance, and operational performance of similar fleet assets previously acquired be considered in purchase decisions.

Recommendation 8.6

We recommend that the Department of Natural Resources improve safeguarding of its fleet assets, parts and supplies.

Recommendation 8.7

We recommend that Transportation and Public Works and Natural Resources develop a formal fleet maintenance policy and improve existing systems and practices to ensure vehicles are properly maintained. We further recommend that maintenance activities be adequately supported by appropriate documentation.

Recommendation 8.8

We recommend that Transportation and Public Works and Natural Resources obtain and use information necessary to monitor whether fleet assets are used efficiently and only for authorized purposes.

Recommendation 8.9

We recommend that government require reimbursements for personal use of government vehicles based on full operating and capital costs.

Recommendation 8.10

We recommend that Transportation and Public Works document the value in permitting certain unreimbursed use of vehicles by staff who are on-call or standby. TPW should also submit for expert analysis its practices in this area to ensure full compliance with the Income Tax Act.

Recommendation 8.11

We recommend that the current registration process be reviewed to determine if there is an opportunity to improve the efficiency of registering Provincial vehicles with the Registry of Motor Vehicles.

Recommendation 8.12

We recommend that expenses of the Department of Natural Resources be recorded in appropriate general ledger accounts, and that the Department's budget have no role in how expenses are classified.

Recommendation 8.13

We recommend that Transportation and Public Works and Natural Resources ensure that bulk fuel storage for fleet operations complies with Provincial regulations. Documentation for inspection and maintenance of storage tanks should be improved. Responsibilities for fuel storage should be clearly assigned and communicated.

Recommendation 8.14

We recommend the preparation and implementation of a government-wide policy for the storage and handling of fuel. The policy should be adequately communicated and address all requirements of the Petroleum Management Regulations and Dangerous Goods Management Regulations. Environmental site assessments should be performed on all fuel storage sites operated by the Provincial government, and contaminated sites requiring remediation should be remediated in a timely manner.

Recommendation 8.15

We recommend that the Department of Natural Resources comply with sole-sourcing approval and reporting provisions of the Provincial Procurement Policy.

Recommendation 8.16

We recommend measures be taken by Transportation and Public Works and Natural Resources to improve controls over fuel expenses and consumption.

REPORT of the AUDITOR GENERAL to the NOVA SCOTIA HOUSE OF ASSEMBLY

2005

June

Office of the Auditor General

Mission

To serve the House of Assembly and the people of Nova Scotia by providing independent assurance and advice to enhance government accountability and performance.

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Demonstrating and being recognized for independence, professional excellence, and credibility.

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Honourable Murray Scott
Speaker
House of Assembly

Sir:

I have the honour to submit herewith an additional Report to the House of Assembly under Section 9A(1) of the Auditor General Act, to be laid before the House in accordance with Section 9A(2) of the Auditor General Act.

Respectfully submitted

E R Salmon

E. ROY SALMON, FCA
Auditor General

Halifax, Nova Scotia
May 27, 2005

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APPENDIX

1 Auditor General Act - Sctions 8, 9, 15, 17 140

Introduction

1 MESSAGE FROM THE AUDITOR GENERAL

INTRODUCTION

1.1 Under 9A(1) of the Auditor General Act, I have the mandate to report annually to the House of Assembly and may make, in addition to any special report, not more than two additional reports in any year. The deadline for the Annual Report is December 31.

1.2 Last year I tabled an additional report in June, and since it was well received by the Public Accounts Committee, I am tabling this Report at this time. Like last year, it includes the results of work carried out since my December 2004 Annual Report.

1.3 My objective is to provide information to the House of Assembly on a more timely basis and allow the Public Accounts Committee to consider these matters and call witnesses on a more timely basis.

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1.4 This Report contains seven chapters resulting from audit work completed between December 2004 and May 2005. Two of the chapters deal with government-wide matters, financial reporting and systems and controls and five deal with departmental programs or systems.

1.5 Consistent with one of the major priorities outlined in my 2005 *Business Plan*, three of the audits of departmental programs (Special Education, NSHIS and Fleet Management) focused on specific program areas as opposed to higher-level departmental matters and more closely address the core audit mandate of the Office (e.g., stewardship of public money, internal control, efficiency and economy, and compliance with legislation).

1.6 As in last year's additional report, I have not prepared either an overview or summary of significant findings. However, I have issued a separate highlights volume.

CONCLUSION

1.7 Members of the House of Assembly, particularly members of the Public Accounts Committee, expressed support for last year's additional report. I trust they will have the same reaction this year. In particular, I would welcome comments on the more in-depth focus of the program audits.

1.8 Finally I would like to commend and thank my staff for their efforts in producing this Report, and adapting to this change in priorities and time lines.

Government-Wide Issues

2 GOVERNMENT FINANCIAL REPORTING

BACKGROUND

2.1 Members of the Legislative Assembly (MLAs) need adequate information on the Province's financial plans, performance and condition to hold government accountable for its use and control of public funds and resources.

2.2 The Minister and Deputy Minister of Finance are assigned various authorities and responsibilities related to the role of a chief financial officer for the Province under the provisions of the Provincial Finance Act. Certain of these assignments include the need for Governor in Council (i.e., Executive Council) approval or ratification of planned actions.

2.3 The Provincial Finance Act defines a number of financial reporting requirements for the Minister or Deputy Minister of Finance to meet on behalf of government. These include the following requirements.

- Annual estimates (Section 7A)
- Interim reports on public finances (Section 8B, see also Section 77)
- Annual public accounts (Sections 9 and 10)
- Remission of tax, penalty or other debts (Section 19B)
- Additional appropriations (Section 28, see also Section 75)
- Special warrants (Section 29, see also Section 59D)
- Redemption or purchase of securities (Section 54)
- Financial transactions (Section 59B)
- Financial obligations (Section 59C)
- Consolidated fiscal plan (Section 82)
- Report on outcomes for fiscal year (Section 83)

2.4 Further, Section 73 of the Provincial Finance Act requires that crown corporation business plans, any proposed public financing and audited financial statements be tabled in the House of Assembly each year.

2.5 As a foreign registrant of the Securities and Exchange Commission (SEC) in the United States, or its equivalent in other countries, government must file required documents in order to be able to access financing or financial markets.

2.6 In addition to required financial reporting, government can and has periodically, at its discretion, released other financial information or reports (e.g., debt reduction plan) publicly.

2.7 Professional standards require that the auditor of an entity with public accountability, like the Province, communicate with those having oversight responsibility for the entity's financial reporting process. For the Province's

financial reporting, oversight responsibility rests, to a significant extent, with the Executive Council. In addition, the House of Assembly, including its Public Accounts Committee, has an important role in the oversight and public accountability process for the Province's financial reports issued by government.

2.8 In accordance with the professional standards referred to above, the Office of the Auditor General's *2004 Performance Report and 2005 Business Plan* publication (issued March 8, 2005) included comments on the independence of the Auditor General position from government as well as on the professional conduct rules and standards adhered to by the Office.

RESULTS IN BRIEF

2.9 The following are our principal observations in this chapter.

- The Auditor General's opinion on the government's 2005-06 revenue estimates was qualified because the revenue estimates are not presented on the same consolidated basis as the Province's consolidated financial statements. It was tabled April 26, 2005 as part of the *Nova Scotia Budget* publication (page A2). A management letter on this year's review was issued to government in May 2005.

- Our audit of the Province's March 31, 2005 consolidated financial statements will be completed between May and September 2005. The target deadline for providing our opinion on those statements, for printing purposes, is September 22, 2005. The scheduled date assumes year-end accounting and audit readiness requirements are met.

- Additional appropriations of $99,017,194 for 2003-04 program expenses were approved on December 3, 2004 by Order in Council 2004-469. No special warrants have been approved since our last Report. Based upon forecast information included in the 2005-06 budget document, additional appropriations of approximately $222.2 million may be required for 2004-05.

- In order for the Province to issue debt in the United States market, government must file an Annual Report (Form 18K) with the U.S. SEC. This report is supposed to be updated annually by December 31. At the time of writing this Report, the Province's Form 18K had not been updated since December 2003.

SCOPE

2.10 The Auditor General Act provides broad mandates for the Office to examine and report on use and control of public funds or resources by government, its controlled entities, and recipients of financial assistance. Further, Sections 9 and 9B of that Act provide for specific annual coverage and reporting by the Auditor General on government's financial statements (audit - high assurance) and revenue

estimates (review - moderate assurance), respectively. The Office is also required to review the Province's annual U.S. SEC filing documents (Form 18K).

2.11 The annual financial statements of various crown entities and trusts are, depending on statutory or other arrangements, audited and reported upon by the Auditor General or a public accounting firm. We consider these financial statement audits, as well as other government financial reporting, where appropriate during the conduct of the Office's discretionary broad scope assignments in selected areas each year.

2.12 The purpose of this chapter is to provide summary comments and observations on government's financial reporting, including information on the planning or results of the Office's examinations of the government's financial statements and revenue estimates.

PRINCIPAL FINDINGS

Review of Revenue Estimates

2.13 The Auditor General's reporting, required under Section 9B of the Auditor General Act, on the 2005-06 revenue estimates was tabled in the House on April 26, 2005 along with the supporting information for the 2005-06 Nova Scotia Budget. Exhibit 2.1 on page 16 is a copy of the Auditor General's Report on the 2005-06 Revenue Estimates. The Report is qualified because the revenue estimates are not presented on the same consolidated basis as the Province's consolidated financial statements.

2.14 Subsequent to the conclusion of our review of the revenue estimates, we issued a management letter to Finance in May 2005. That letter provided additional observations and comments from our review of the 2005-06 revenue estimates and other related information included in the Minister of Finance's April 26, 2005 Budget Address and supporting documents.

2.15 The following is a summary of selected matters and recommendations in the management letter.

- During our review of the revenue estimates, we accumulate potential errors on a schedule referred to as the summary of possible differences. Differences identified during our 2005-06 review net to an average understatement of $5.11 million (possible range of $0 to $10.22 million).

- Department of Finance staff should have information on government's revenue and spending plans. We believe they need this information in order to properly develop assumptions regarding economic growth for the upcoming fiscal year. These factors could have a significant impact on the economy. The economic assumptions and the revenue line-item estimates for 2005-

06 were developed by staff without direct knowledge of, or information on, government's revenue and spending plans. Subsequently, once the 2005-06 revenue and spending plans were finalized, the impact on the economic assumptions and the revenue line-items was assessed by Finance senior management.

- The government's values for economic assumptions were not used directly to estimate all revenue line-items which should have used those values. Certain revenues were estimated using other sources of assumptions. For example, the estimate of Provincial income tax revenues was developed using the Federal government's estimate for national growth in personal income rather than using Nova Scotia's assumption regarding national growth in personal income. The impact of using assumptions from other sources rather than the Provincial government's values for economic assumptions was assessed and included in the summary of possible differences referred to above.

- Generally accepted accounting principles (GAAP) require that Federal revenues (transfer payments) be recorded as revenues by the receiving Province. In Nova Scotia's 2004-05 forecast and 2005-06 budget, a number of Federal revenues are netted against expense rather than reflected in revenues. This is not in accordance with GAAP. This results in an understatement of revenues and expenses in the 2004-05 forecast of $17.9 million and the 2005-06 budget of $68.8 million. There is no net impact on the surplus reported.

  The accounting for the recognition of these Federal transfers will be assessed in more detail as part of the audit work for the March 31, 2005 consolidated financial statements. In this regard, there needs to be a clear trail from the funding provided to the specific expenses incurred in order to properly manage and account for the funds received.

- During our review, we found a number of instances where staff in various departments, who were responsible for estimating the revenue of a particular line item, did not agree with the estimated revenue figures provided to us by the Department of Finance. We were informed that these discrepancies were caused by a timing difference. After staff at Finance obtained the revenue estimates from the various departments, they were subsequently updated and staff at Finance was not aware of these updates. Once we communicated the existence of these discrepancies to staff at Finance, the revenue estimates were updated to agree with the latest information from the applicable departments. This resulted in a net increase in estimated revenues of $8.63 million for 2005-06.

- Companies with licenses for exploration off Nova Scotia must pay 25% of guaranteed expenses not spent within five to nine years of obtaining a license. Revenue generated from this process is referred to as offshore license and forfeiture revenue. The 2004-05 budget did not include an estimate of this revenue line-item. The 2004-05 forecasted revenue for this line item in the

2005-06 budget is now $54.9 million. Staff within the Department of Finance indicated to us that they were not aware of the existence of this potential revenue during the 2004-05 budget process as no information was provided by the Department of Energy. During the 2005-06 budget process the Department of Energy notified the Department of Finance of potential revenue for this line item but indicated that the potential revenue was not measurable due to the uncertainty involved. As a result, estimated revenues from offshore licenses and forfeitures are not included in the 2005-06 budget. An estimated potential understatement of 2005-06 revenues for this line item is included in the summary of possible differences referred to above.

- Adjustments are made to estimated revenues reported for specific fiscal years based upon updated information. For example, personal income tax revenues for the 2003-04 fiscal year will be adjusted in 2004-05 based on updated assessment information. These changes are referred to as prior year adjustments (PYAs). Since 1994-95, net PYAs totalling $715 million have been reported by government. PYAs will most likely be identified during 2005-06 and, in future years. These PYAs could be significant individually or collectively. It is possible that further adjustments may be necessary to the forecasted PYAs for 2004-05 as a result of updated information that becomes available prior to the finalization of the Province's March 31, 2005 consolidated financial statements.

- When the Forecast Update for 2004-05 was released on December 20, 2004, we had concerns regarding the presentation of the Provincial surplus amounts in the 2004-05 budget and forecast update. The $10 million budget and $70 million forecast items under the caption "debt retirement plan" were not legitimate charges in the determination of government's annual surplus under generally accepted accounting principles (GAAP). In the 2004-05 Forecast Update, the budgeted Provincial surplus should have been presented as $12.1 million and the forecasted Provincial surplus presented as $72.7 million. We communicated our concerns to the Department of Finance and acknowledge the presentation and disclosure changes made in the 2005-06 budget documents to address them.

- Management at the Department of Finance has indicated to us that there are plans to review the content of the Province's financial reports during 2005-06, to ensure they meet user requirements. The review will attempt to identify the best way to present information for users. We believe such a review could be a valuable exercise and encourage the Department to effectively implement its plans in this regard.

- Exhibit 2.2 on page 17 provides a summary variance analysis and explanations comparing the 2004-05 revenue estimate and the 2004-05 forecast included in the 2005-06 budget documents.

- Exhibit 2.3 on page 18 provides a summary variance analysis and explanations comparing the 2004-05 forecast and the 2005-06 revenue estimates included in the 2005-06 budget documents.

- The 2005-06 revenue estimates management letter included the following recommendations.

Recommendation 2.1

We recommend that the development of the economic assumptions and estimated revenues for each line item be completed after the Executive Council has approved planned revenue and spending decisions for the coming year. The impact of those decisions should be specifically incorporated into the development of the economic assumptions and the revenue line items.

Recommendation 2.2

We recommend the effective date of the economic assumptions be the date they are approved by the Executive Council.

Recommendation 2.3

We recommend all key economic assumptions used in the development of the revenue estimates be approved by the Executive Council.

Recommendation 2.4

We recommend that, in accordance with GAAP, Federal transfer payments be included in revenue as opposed to being netted against expense appropriations.

Recommendation 2.5

We recommend the budget process be reviewed and revised to ensure there is proper cut off of information and that the revenue estimates reflect the most current information available.

Recommendation 2.6

We recommend the budget process be reviewed and revised to ensure Finance is made aware of all potential revenue line items so the Department can assess relevant information when determining the Province's estimated revenues and related disclosures.

Audit of Government's Financial Statements

2.16 Under Section 9 of the Auditor General Act, the Auditor General is mandated to examine and report on the government's annual consolidated financial statements. The December 2004 Report of the Auditor General, released on December 15,

2004, provides summary observations and recommendations on the results of our audit of the Province's March 31, 2004 consolidated financial statements which were released on September 30, 2004 as part of Volume 1 of the Public Accounts.

2.17 We issued a letter to Finance on March 14, 2005 which included a list of information, schedules, documentation and other readiness requirements to be prepared by government management and accounting staff to facilitate the timely and cost-effective completion of the audit of the Province's consolidated financial statements for the fiscal year ending March 31, 2005.

2.18 As in prior years, the audit of the consolidated financial statements is to be completed in two phases. Most of the work for the first phase, focusing on the core government consolidated fund accounting balances, is scheduled to start May 25, with an interim exit meeting scheduled for July 18. The second phase involves work on the draft consolidated financial statements, which are to be made available to our Office by August 11.

2.19 The following are some of the key accounting, control and other issues that we are aware of which will be considered as part of the 2004-05 financial statement audit:

- the implications of the qualified opinion and deficiencies identified in the service auditor's report on the controls for the centralized SAP infrastructure (see Chapter 3, paragraphs 3.15 to 3.18);

- the implications of the denial of opinion and identified deficiencies in the audit of the governance and control framework of the operations of the Investment, Liability Management and Treasury Services and Capital Markets Administration Divisions completed by a private sector firm during 2004, including the progress made to address identified deficiencies;

- the implications and status of the investigation of the possible fraud discovered at Service Nova Scotia and Municipal Relations;

- the accounting for the recognition of various Federal transfer payments, considering the need for a clear trail from the funding provided to the specific expenses incurred in order to properly manage and account for the funds received;

- the completeness of disclosure of contractual obligations;

- the reconsideration of the Workers' Compensation Board's government reporting entity status; and

- the revisions to disclosure in the Public Accounts Volume 1 to take into consideration the *Financial Statement Discussion and Analysis* guideline issued by the Public Sector Accounting Board (PSAB) in 2004.

2.20 The target deadline for providing the opinion on the consolidated financial statements, for printing purposes, is September 22, 2005. The scheduled date assumes year-end accounting and audit readiness requirements are met on a timely and appropriate basis.

2.21 Generally accepted accounting principles (GAAP) are not static. Standard setters in Canada and internationally continue to develop new or revised pronouncements in important areas. PSAB is the primary body issuing recommendations on public sector accounting in Canada. The following are the more significant matters in progress at PSAB or on which it has recently released final or draft pronouncements:

- financial statement discussion and analysis;
- government transfers;
- liabilities, contingent liabilities and contractual obligations;
- GAAP hierarchy; and
- financial instruments.

2.22 New formal recommendations or guidance in these areas could require changes to government's financial reporting in the future. As we previously recommended, government, where possible, should identify required or planned accounting changes to the House in advance of the start of the fiscal year in which they will be implemented.

2.23 Government, primarily through management of the Department of Finance, is responsible for preparation of the Province's consolidated financial statements. This includes responsibilities related to internal control, such as designing and maintaining accounting records, selecting and applying accounting policies, safeguarding assets, preventing and detecting error and fraud, and being aware of circumstances that could result in fraudulent financial reporting.

2.24 The Auditor General's responsibility is to express an opinion on the consolidated financial statements. The opinion is based on our audit which is performed to obtain reasonable, but not absolute, assurance as to whether the financial statements are free of material misstatement. Due to the inherent limitations of an audit, there is an unavoidable risk that some misstatements of the March 31, 2005 consolidated financial statements will not be detected even though the audit is properly planned and performed.

2.25 The audit includes assessing the risk that the financial statements may contain misstatements that, individually or in aggregate, are material to the financial statements taken as a whole; examining on a test basis, evidence supporting the amounts and disclosures in the financial statements; assessing the accounting principles used and their application; and assessing the significant estimates made by management.

2.26 In conducting our audit, we obtain a sufficient understanding of the systems and controls to plan the audit. Where we intend to rely upon controls, sufficient audit evidence is obtained to support that assessment. However, the scope of our review of government's systems and controls during the audit of the March 31, 2005 consolidated financial statements will not be sufficient to conclude on the adequacy of the overall level or quality of controls.

2.27 The financial statements of various crown corporations and agencies of government are audited by other auditors. As appropriate under generally accepted auditing standards, we rely on the work and reporting of these other auditors.

2.28 The Auditor General will express an opinion as to whether the Province's consolidated financial statements present fairly, in all material respects, the financial position, results of operations and cash flows of the Province of Nova Scotia in accordance with Canadian generally accepted accounting principles for the public sector. Our audit will be carried out in accordance with Canadian generally accepted auditing standards.

2.29 The concepts of materiality and audit risk are implicit in the wording of the standard auditor's report. It is intended to communicate, amongst other items, that the amounts included in the financial statements are not necessarily precise and that the audit does not provide absolute assurance that the financial statements are not materially misstated. In this regard, as noted, we seek reasonable assurance that the financial statements as a whole are not materially misstated. Government is responsible for maintaining accurate books and records, and the expectation is that non-trivial errors will be corrected.

Other Matters

2.30 Additional appropriations and special warrants - Section 9A of the Auditor General Act requires, among other things, that we call attention to every case observed in which any appropriation is exceeded or a special warrant is authorized. Our last reporting under that section was in the December 2004 Report of the Auditor General, chapter 2. We provide the following updated comments.

2.31 Under the provisions of Section 28 of the Provincial Finance Act, on December 3, 2004 the Executive Council approved Order in Council 2004-469 approving additional appropriations for 2003-04 of $99,017,194 for program expenses.

2.32 As per the 2004-05 forecast information released with the Minister of Finance's April 26, 2005 Budget Address, subject to year-end accounting or audit adjustments, additional spending authority (additional appropriations) of approximately $222.2 million will need to be approved by OIC within 90 days of the government's release of the March 31, 2005 consolidated financial statements.

2.33 We note that since our last Report, there have been no special warrants approved by the Executive Council under Section 29 of the Provincial Finance Act.

2.34 SEC annual filing - In order for the Province to issue debt in the United States market, government must have an Annual Report (Form 18K) on file at the U.S. SEC. This report is supposed to be updated annually by December 31. At the time this chapter was drafted in early May 2005, the Province's Form18K had not been updated since December 2003 when it was updated for the 2002-03 fiscal year.

2.35 We are required to review the content of the Province's annual Form18K. A draft of the 2003-04 Form 18K was prepared and provided to us for review in mid-December 2004. We had some questions and concerns regarding the content which were communicated to the Department of Finance in December 2004. Some, but not all of our issues had been addressed at the time this chapter was written. Management indicated to us that the delay in responding is partially due to a lack of resources within the Department. Management has indicated that the material will be updated before it is resubmitted for review and finalization.

Recommendation 2.7

We recommend government take steps to ensure the necessary resources and processes are in place to ensure the Province's annual SEC Form 18K report is filed as required on a timely basis.

CONCLUDING REMARKS

2.36 We acknowledge that government made amendments to the presentation of the surplus amounts in the 2005-06 budget documents to ensure they are GAAP compliant. We support Finance's plan to review the content of government's financial reports to ensure they meet the needs of their users. These actions contribute to the quality of government's financial reporting.

Exhibit 2.1

Report of the Auditor General to the House of Assembly on the Estimates of Revenue For the Fiscal Year Ending March 31, 2006 used in the preparation of the April 26, 2005 Budget Address

I am required by Section 9B of the Auditor General Act to provide an opinion on the reasonableness of the estimates of revenue used in the preparation of the annual budget address of the Minister of Finance to the House of Assembly.

The estimates of revenue for the fiscal year ending March 31, 2006 (the 2005-06 revenue estimates) are the responsibility of the Department of Finance and have been prepared by departmental management using assumptions with an effective date of March 2, 2005. I have examined the support provided by the department for the assumptions, and the preparation and presentation of the 2005-06 revenue estimates of $6,444,214,000 for total revenue as per Schedule 6 in the Financial and Supplementary Information section. My opinion does not cover the budget address, the 2004-05 forecast, the 2005-06 spending estimates, sinking fund earnings, nor recoveries, user fees or other income netted for annual appropriation purposes. My examination was made in accordance with the applicable Auditing Guideline issued by the Canadian Institute of Chartered Accountants. I have no responsibility to update this report for events and circumstances occurring after the date of my report.

Commencing with the fiscal year ending March 31, 1999, the Government implemented consolidated financial statement reporting in accordance with Canadian generally accepted accounting principles for the public sector. Consistent with prior years, the 2005-06 revenue estimates have been presented including the total revenue of the Consolidated Fund established under the provisions of the Provincial Finance Act. As a result, sinking fund earnings and revenue of certain government organizations reported as revenue in the Province's consolidated financial statements are excluded from the 2005-06 revenue estimate for total revenue, but included elsewhere in the 2005-06 estimates, and have not been included in my examination.

Except for the effect of adjustments, if any, which might have been necessary as a result of the matter discussed in the preceding paragraph, in my opinion,

- as at the date of this report, the assumptions used are suitably supported and consistent with the plans of the Government, as described to us by departmental management, and provide a reasonable basis for the 2005-06 revenue estimates; and

- the 2005-06 revenue estimates as presented reflect fairly such assumptions.

Since the 2005-06 revenue estimates are based on assumptions regarding future events, actual results will vary from the information presented and the variations may be material. Accordingly, although I consider, except for the matter discussed above, the 2005-06 revenue estimates to be reasonable, I express no opinion as to whether they will be achieved.

E.R. Salmon, FCA
Auditor General

Halifax, Nova Scotia
April 21, 2005

Summary Variance Analysis and Explanations between the 2004-05 Revenue Estimates and the 2004-05 Revenue Forecast included in the 2005-06 Budget (millions)

Exhibit 2.2

Revenue Line Item	2004-05 Estimate	2004-05 Forecast	Variance (increase decrease)	Explanations
Corporate Income Tax (CIT)	$ 263.8	$ 316.1	$ 52.3 19.8%	The base of the model used to estimate this revenue is national corporate taxable income and Nova Scotia's share of that income. The increase in the Provincial corporate taxable income is expected to be 14.4%. This is based upon final 2003 assessment data. This is consistent with the change in the expected growth in national corporate profits between the 2004-05 estimate and 2004-05 forecast.
Equalization	$1,202.9	$1,321.4	$ 118.5 9.9%	The 2004-05 forecast is legislated by the federal government. The federal government plans to increase Equalization transfers to the provinces over a 10 year period as described in the 2005 Federal Budget.
Canada Health Transfer/Canada Social Transfer (CHT/CST)	$645.4	$670.8	$25.4 3.9%	This increase is due mainly to a $1 billion increase in CHT nationally for 2004-05 as part of the federal plan to increase federal support to strengthen health care as described in the 2005 Federal Budget. Nova Scotia's share of this funding is $29.4 million.
Wait Times Reduction Funds	$0.0	$18.3	$18.3 100%	This is new funding approved by the Federal government in 2004-05 after the 2004-05 budget process was completed.
Offshore Licenses and Forfeitures	$0.0	$54.9	$54.9 100%	No amount was budgeted for this revenue in the 2004-05 estimate process. Department of Finance and the Auditor General's Office were not made aware of the existence of this possible revenue and the fact that it was not estimated. Department of Energy knew there was potential revenue but they were uncertain as to the amount, if any, that would be realized and thus felt an estimate could not be reasonably determined.
Prior Year Adjustments (PYAs)	$0.0	$19.3	$19.3 100%	PYAs are not budgeted. They represent changes in estimates based upon updated information. The revenue is recognized in the period the updated information becomes available.

The table provides the major positive and negative contributions to the overall variance. The 2004-05 total revenue estimates were $ 5,916.3 million and the 2004-05 total revenue forecast was $6,190.9 million for a total net variance of $274.6 million or 4.6%.

Exhibit 2.3

Summary Variance Analysis and Explanations between the 2004-05 Revenue Forecast and the 2005-06 Revenue Estimates included in the 2005-06 Budget (millions)

Revenue Line Item	2004-05 Forecast	2005-06 Estimate	Variance (increase decrease)	Explanations
Personal Income Tax (PIT)	$ 1,456.7	$1,553.6	$ 96.9 6.6%	Model used to estimate revenue is based upon Federally-determined national taxable income. The key economic assumption used by the Federal government to determine this is the national personal income growth. The Federal government is expecting a 5% growth in national personal income. This accounts for a majority of the variance.
Corporate Income Tax (CIT)	$316.1	$350.2	$34.1 10.8%	The base of the model used is national corporate taxable income. It is expected that national corporate taxable income will grow by 7.5% over 2004. This is consistent with the expected growth in national corporate profits. Expected credit take-up in 2005-06 is moderately lower than in 2004-05 with credits falling by $8 million mainly due to the sunset of the manufacturing investment tax credit. There is $8 million in offshore CIT included in the 2005-06 estimate. An estimate for this item is not included in the 2004-05 forecast.
Harmonized Sales Tax (HST)	$1,031.1	$1,068.9	$37.8 3.7%	Consumer expenditures are the main driver of this model. The estimated growth in consumer expenditures for 2005 is 4.2%.
Equalization	$1,321.4	$1,343.5	$22.1 1.7%	These two amounts are legislated by the Federal government. The Federal government plans to increase Equalization transfers to the provinces over a 10 year period as described in the 2005 Federal Budget.
Canada Health Transfer (CHT)	$425.9	$578.4	$152.5 35.8%	The majority of this variance is due to the fact that the Federal government has increased the national allocation for CHT by $6 billion in 2005-06 as described in the 2005 Federal Budget. Nova Scotia's share of this base increase is $157.1 million which is based upon Nova Scotia's share of the Canadian population. The 2005-06 CHT amount includes the health reform fund which was a separate revenue line item in the 2004-05 forecast and is shown further down in this exhibit.

Revenue Line Item	2004-05 Forecast (millions)	2005-06 Estimate (millions)	Variance (millions)	Explanations
Canada Social Transfer (CST)	$244.9	$257.4	$12.5 5.1%	According to legislation, the national total federal allocation for CST will increase by $325 million between 2004-05 and 2005-06. Nova Scotia's share of this increase is $9.5 million which is based upon Nova Scotia's share of the Canadian population.
Canada Health and Social Transfer (CHST) Supplement	$58.6	$0.0	($58.6) 100%	This funding was approved in 2004-05 and was fully and appropriately recognized in 2004-05.
Health Reform Fund	$44.0	$0.0	($44.0) 100%	Federal government moved this funding to be part of the CHT transfer in 2005-06.
Offshore Oil and Gas Payments	$0.0	$57.1	$57.1 100%	This is as a result of the new Offshore Accord Agreement entered into with the Federal government in February, 2005. This was not known at the time of the 2004-05 estimate process.
Offshore Licenses and Forfeitures	$54.9	$0.0	($54.9) 100%	There were 22 plots with licenses which expired during 2004-05. For 2005-06 there are only six plot licenses which could expire so the potential revenue is significantly less. We have noted a potential understatement of this revenue on our summary of possible differences.
Offshore Offset	$34.0	$4.0	($30.0) 88.2%	The amount for each year is legislated by the Federal government.

The table provides the major positive and negative contributions to the overall variance. The 2004-05 revenue forecast is $6,190.9 million and the 2005-06 estimates are $6,444.2 million for a total increase of $253.3 million or 4.1%.

3 GOVERNMENT SYSTEMS AND CONTROLS

BACKGROUND

3.1 Government financial, program and other management activities are facilitated or supported by a variety of systems and control processes. These include a number of corporate or government-wide systems. There are also numerous entity or program-level systems and processes.

3.2 Government's business systems and technology initiatives are subject to oversight review by the Business Technology Advisory Committee (BTAC), which is a committee of deputy ministers reporting to Treasury and Policy Board (TPB). Initiatives within crown entities are to be governed by their respective governing board or other appropriate body.

3.3 Government's Management Manuals and other policy directives are coordinated through Treasury and Policy Board or the Public Service Commission.

3.4 Although not specifically quantified, the costs of acquiring, implementing, operating and maintaining systems and control processes within the Provincial public sector are significant. Further, it is also important to consider the quality and cost-effectiveness of the systems and control processes in mitigating financial and other risks of managing government programs and services.

RESULTS IN BRIEF

3.5 The following are our principal observations presented in this chapter.

- The government has a number of significant systems and control initiatives in process at this time. The capacity of existing resources assigned to such initiatives needs to be monitored effectively in order to achieve successful results and outcomes.
- The first independent service audit of the SAP Customer Competency Centre of the Department of Finance, reported in January 2005, contained a reservation of opinion.
- The results of the annual independent service audit of control procedures in place for processing on government's large mainframe computer systems provide reasonable, but not absolute, assurance on the adequacy of controls. The audit deals with control procedures at a specific point in time, and only those that are the responsibility of the contracted service organization. There are significant matters not covered by the audit which are government's specific and direct responsibility.

- Better reporting to the House of Assembly in regards to annual business planning information and accountability reporting on the Industrial Expansion Fund is required.

- We reviewed the second edition of the *Business Climate Index* (Index), published for 2003, in which Nova Scotia ranked fourth. We selected a sample of the indicators, to determine whether the Index reflected the underlying Statistics Canada data. We noted no issues with the sample indicators.

- The information on tangible capital assets in government's corporate financial management system (CFMS) is not always updated in a timely manner for asset transfers from one department to another or for disposal of an asset.

SCOPE

3.6 The Auditor General Act provides broad mandates for the Office to examine and report on the use and control of public funds or resources by government, its entities, and recipients of financial assistance. For example, Section 8 of that Act indicates that we may examine whether:

- accounts have been faithfully and properly kept;

- all public money has been fully accounted for, and the rules and procedures applied are sufficient to secure an effective check on the assessment, collection and proper allocation of the capital and revenue receipts;

- money which is authorized to be expended by the Legislature has been expended without due regard to economy or efficiency;

- money has been expended for the purposes for which it was appropriated by the Legislature and the expenditures have been made as authorized; and

- essential records are maintained and the rules and procedures applied are sufficient to safeguard and control public property.

3.7 The purpose of this chapter is to provide summary observations and information on the government's systems and control processes in order to assist the House of Assembly, and its Public Accounts Committee, to hold government accountable for the adequacy of systems and controls over the use of public funds or resources. Other chapters of this Report may also include related observations as a result of audit examinations in specific areas or entities.

3.8 Comments in this chapter are not the result of formal, completed audits but rather the result of ongoing review and enquiry procedures, and are provided herein for information purposes only.

PRINCIPAL FINDINGS

3.9 The government has a number of significant systems and control initiatives in process at this time. The capacity of existing resources assigned to such initiatives needs to be monitored effectively in order to achieve successful results and outcomes.

3.10 The following are some examples of the system and control-related initiatives in process or planned across government.

- The Office of Economic Development plans to develop a corporate information management strategy and framework for government-held information which includes corporate information management policies, standards and guidelines.
- The Office of Economic Development in collaboration with the Department of Transportation and Public Works has initiated a three-year project to examine all areas of government information technology operations to identify areas to improve efficiency, reduce cost, and meet the changing demands for technology services in the public sector.
- Implementation of SAP's human resource module for core government and regional school boards.
- Implementation of SAP's loan portfolio module for both the Nova Scotia Fisheries Loan Board and the Nova Scotia Farm Loan Board.
- Continued implementation of SAP's utilities and tax module for the municipal sector.
- Implementation of SAP portals in support of e-government services.
- Continued consideration and planning for implementation of SAP for the District Health Authorities.
- Implementation of the Nova Scotia hospital Information System (see chapter 6 of this Report).
- Implementation and additional leveraging of the Justice enterprise information network.
- Planning for the implementation of a single Province-wide standardized student information system.
- Implementation of improved integration of on-line sevices for Nova Scotians by Service Nova Scotia and Municipal Relations. This is to include the implementation of French language website content.

- To support the wide area network security policy, Transportation and Public Works will be actively implementing a program of cyber security practices and measures.

- Implementation of a winter road conditions monitoring and information system to support the snow and ice control program.

- Department of Community Services has launched a multi-year integrated case management project to modernize systems and improve delivery to clients.

3.11 The listing provided above is not complete. It emphasizes the variety of initiatives that government management is dealing with in addition to the planning and provision of on-going government services.

CFMS and SAP Control Initiatives

3.12 The 2003 Report of the Auditor General (Chapter 3) included the results of our examination of selected aspects of the government's SAP corporate financial management system (CFMS). We identified a number of significant control concerns and provided 20 specific recommendations for consideration by Department of Finance management. Certain of those recommendations required consideration on a government-wide basis, not just by Finance.

3.13 Finance management had committed to addressing the control concerns we reported, and undertook to develop an action plan to identify and assess alternatives for each of our recommendations. A steering committee was established in April 2004 to oversee this process.

3.14 An updated status report was provided to the steering committee in February 2005. Although we have not yet assessed the actions taken or planned, that report indicated that several of the recommendations were either in process of being addressed, or had been completed.

3.15 One recommendation has been addressed. Government contracted for an annual service auditor review of Finance's SAP Customer Competency Centre (CCC) formerly referred to as the Corporate Information Systems Division. This included a service auditor report on controls for the centralized SAP infrastructure and support functions performed by the CCC for government and for a number of public sector entities. The initial audit work was planned for completion in November 2004. A report dated January 7, 2005 was released in April 2005. Exhibit 3.1 on page 28 is an extract from the first auditor's report on control procedures of the SAP Customer Competency Centre.

3.16 The audit examined control procedures in nine areas.

- Management and administration controls
- Physical access controls
- Access controls

- Application software development and maintenance
- Computer operations
- Change management
- Client services
- Backup and recovery
- Technical services

3.17 The service auditor report contained a reservation of opinion for eight control procedures in five of the nine areas, that did not operate effectively as at November 15, 2004. The control procedures where exceptions were noted follow.

- Staff termination notification
- Physical security
- Audit logging
- Account lockout
- Access to privileged accounts
- Client involvement in the application development lifecycle
- Service level reporting
- Maintenance agreements

3.18 This first service auditor report provided an opinion as at a specific point in time (November 15, 2004). The contractual arrangement with the service auditor calls for further audits. The next audit was scheduled to cover the period from November 15, 2004 to March 31, 2005. However, we have been informed by management that a decision was made to defer this audit one year. This next audit, therefore, will not result in availability of the related report to those public sector entities or their auditors that need to issue their financial statements by June 30, 2005. In future, the service auditor report should be completed and available to the auditors of public sector entities on a more timely basis (e.g., by early May of each year).

Provincial Data Centre Services

3.19 In the 1990s, government entered into contract arrangements to outsource its Provincial data centre processing requirements. Those arrangements require an annual audit by an independent auditor of the contracted service provider's control procedures for the resources used for processing government's mainframe computer systems. This audit is performed in accordance with CICA standards and provides reasonable, but not absolute, assurance to government that the contracted service organization has in place appropriate control procedures for those matters that are its responsibility as at the date of the audit.

3.20 Since the programs, processing and data for significant government systems reside at the data centre (including payroll, drivers' licensing, vehicle registration, property assessment), the results of an independent control audit are relevant to a consideration of the adequacy of government systems and controls. Exhibit 3.2 on page 29 is an extract from the most recent auditor's report on control procedures of the contracted services provided to government on the data centre. This audit addressed five areas of control.

- Security organization
- System access
- System maintenance
- System operations
- System availability

3.21 The report identifies the control procedures in place at the time of the review to support achievement of each of the five control objectives. The report provided an unqualified opinion on those control objectives as at March 18, 2005. A number of significant matters were also identified that are the specific and direct responsibility of government, which are not covered by the annual review and reporting on the responsibilities of the contracted service provider.

Recommendation 3.1

We recommend government assess the adequacy of its own control procedures associated with data processing service provider arrangements.

Industrial Expansion Fund

3.22 Information availability and reporting - The Industrial Expansion Fund (IEF) was established many years ago under Section 4(1) of the Industrial Development Act. Industrial financial assistance is provided through the fund in the form of loans, guarantees or other investment vehicles. All financial assistance provided through the IEF is subject to approval by the Minister of the Office of Economic Development and the Governor in Council (i.e., by Order in Council).

3.23 The fund and its financial assistance accounts are administered through the Office of Economic Development (OED), with accounting support services provided by Nova Scotia Business Inc. As per its March 31, 2004 financial statements, IEF reported net financial assistance outstanding of $217.6 million

3.24 The IEF's annual audited financial statements are tabled in the House along with statements of other crown entities in Volume II of the Public Accounts. However, the annual business planning, budgeting and accountability reporting information tabled in the House by government or available from OED on the government's website includes very limited reference to the fund, its plans, activities or performance. For example, there are crown entities which are inactive or have significantly fewer activities (in dollar terms) but have information published in the annual business planning publications tabled in the House. However nothing of substance is included for the IEF.

Recommendation 3.2

We recommend that annual business planning information and accountability reporting on the Industrial Expansion Fund be made available to the House of Assembly on at least the same basis as such information is currently available on other crown entities.

3.25 Management of the Office of Economic Development provided a response to our comments on the Industrial Expansion Fund. See page 30.

Business Climate Index

3.26 The Office of Economic Development's 2004-05 *Business Plan* notes one of its priorities is to "*Complete the annual update of the Business Climate Index and analyze the results to identify action opportunities in partnership with . . .other departments within the provincial and federal governments.*"

3.27 The *Nova Scotia Business Climate Index* (Index) is comprised of 53 economic indicators based on the general business climate. The indicators compare Nova Scotia's position relative to other provinces. These indicators are organized in four categories; development of capacity, economic performance, tax and fiscal environment, and business vitality.

3.28 We reviewed the second edition of the Index, published for 2003, in which Nova Scotia was ranked fourth. We selected a sample of the indicators, to determine whether the Index reflected the underlying Statistics Canada data. We noted no issues with the sample indicators. Since our review, OED has published a third Index for 2004, in which Nova Scotia ranks third.

Tangible Capital Assets

3.29 Tangible capital assets are a significant investment by government and are essential to the economy and for delivering government services. Through previous audit work on the government's consolidated financial statements, we noted a risk that the list of tangible capital assets maintained in the government's SAP corporate financial management system (CFMS) may not be complete or accurate. Testing of assets under construction had shown that the transfer of assets from under construction to complete (and ready to be amortized) was not always timely. There was also a risk that assets no longer in service were still included on the tangible capital asset listing.

3.30 We completed an assignment to verify the existence of a sample of tangible capital assets and determine whether they were still in use. Our test items came from a number of departments and were located in various areas throughout the Province.

3.31 We were able to verify the existence of the tangible capital assets we selected. However, we found that the information on tangible capital assets in CFMS is not always updated in a timely manner for asset transfers from one department to

another or for disposal of an asset. We also found that some of the information on the assets, such as license number or description, was not accurate or updated when changes were made to the asset. The capability of CFMS as a means of tangible capital asset management and control is not being utilized to its fullest extent.

CONCLUDING REMARKS

3.32 Good systems and controls can be costly, while too many or less than optimized controls can also be costly. Government's challenge is to ensure that the risks of loss or misuse are appropriately identified and that decisions made about the level of control to be in place appropriately mitigate risks on a cost-benefit basis. The goal is not more or too many controls, but rather cost-effective optimization of control against risks.

3.33 The government has a number of significant systems and control initiatives in process at this time. The capacity of existing resources assigned to such initiatives needs to be monitored effectively in order to achieve successful results and outcomes.

Exhibit 3.1

Auditor's Report on Control Procedures at the SAP Competency Centre

To the management of Nova Scotia Department of Finance,

We have examined the accompanying description of the controls provided by the SAP Customer Competency Centre (CCC) and have performed tests of the existence of the control procedures described therein as at November 15, 2004. Our examination was conducted in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as we considered necessary in the circumstances.

As more fully described on pages 10, 11, 12, 14, 15, 16 and 18, certain control procedures did not operate effectively as at November 15, 2004. These related to:

- Staff termination notification;
- Physical security;
- Audit logging;
- Account lockout;
- Access to privileged accounts;
- Client involvement in the application development lifecycle;
- Service level reporting; and
- Maintenance agreements.

In our opinion, except as noted above, the control procedures included in the accompanying description were sufficient to meet the stated control objectives. The described control procedures were suitably designed to provide reasonable, but not absolute assurance that the control objectives described therein were achieved, and the control procedures existed as at November 15, 2004.

As we tested the existence of the control procedures only as at November 15, 2004, we do not express an opinion on whether the control procedures existed at any other time.

Because of inherent limitations in any system of internal control, errors or irregularities may occur and not be detected. Also, projection of any evaluation of the system to future periods is subject to the risk that procedures may become inadequate due to changes in conditions, or that the degree of compliance with the procedures may deteriorate.

Our audit focused on general environment controls and those controls specifically related to the provision of SAP CCC services. We did not test the management controls or detailed user controls exercised by the individual end-user departments in connection with their initial implementation and on-going operation of front end data processing environments. Such controls are the responsibility of the individual end-user organizations.

This report is intended solely for the use of the management of the Nova Scotia Department of Finance.

Halifax, NS, Canada
January 7, 2005

Auditor's Report on Control Procedures at the EDS Data Centre

Exhibit 3.2

We have examined the accompanying description of the stated internal control objectives of the Government of Nova Scotia ["GNS"] mainframe partition at the Halifax Service Delivery Center of EDS Canada Inc. ["HSDC"] and the control procedures designed to achieve those objectives and have performed tests of the existence of those control procedures as at March 18, 2005. Our examination was made in accordance with Canadian generally accepted auditing standards, and accordingly included such tests and other procedures as we considered necessary in the circumstances.

In our opinion, the control procedures included in the accompanying description were suitably designed to provide reasonable, but not absolute, assurance that the stated internal control objectives described therein were achieved and the control procedures existed as at March 18, 2005.

As we tested the existence of the control procedures only as at March 18, 2005, we do not express an opinion on whether the control procedures existed at any other time.

The description of stated internal control objectives of the GNS mainframe partition at the HSDC, and the control procedures designed to achieve those objectives is as of March 18, 2005. Any projection of that description to the future is subject to the risk that, because of change, the description may no longer portray the control procedures in existence. The potential effectiveness of specific control procedures at the HSDC is subject to inherent limitations and, accordingly, errors or fraud may occur and not be detected. Furthermore, the projection of any conclusions, based on our findings, to future periods is subject to the risk that changes may alter the validity of such conclusions.

Our audit focused on the design and existence of information technology general controls at HSDC. We did not audit any of the controls in place at GNS, and accordingly we express no opinion on the design or existence of such controls. Such controls are the responsibility of GNS.

This report is intended solely for the use of GNS.

Halifax, Canada
March 30, 2005

OFFICE OF ECONOMIC DEVELOPMENT'S RESPONSE

The Office of Economic Development will ensure that appropriate business planning information on the Industrial Expansion Fund is included in its annual business plan.

An annual report on the results of the use of the Industrial Expansion Fund was prepared and included with the annual report of the Nova Scotia Business Development Corporation up to the year ended March 31, 2001 but was superceded by the annual reporting of Nova Scotia Business Inc. To the extent that the IEF continues to be employed through OED, OED will commit to the redevelopment and release of a separate annual report on the fund.

Department Audits

4 SPECIAL EDUCATION

BACKGROUND

4.1 For the 2003-04 academic year there were approximately 146,000 students enrolled in Nova Scotia's public school system. The Department of Education (Department) and the Regional School Boards (RSBs) have estimated that 20% or 29,200 of these students will receive some level of service through Special Education programs at some point in their school careers.

4.2 The Department has defined students with special needs to include those students who require supports in addition to those provided by a classroom teacher. These exceptionalities (see Exhibit 4.1) include the following:

- cognitive impairments
- emotional impairments
- learning disabilities
- physical disabilities and/or other health impairments
- speech impairments and/or communication disorders
- sensory impairments - vision, hearing
- multiple disabilities
- giftedness

4.3 The strengths and needs of students with special needs vary widely. At one extreme are gifted students, while at the other are students requiring very intensive one-to-one supports. Some students, particularly those with only physical impairments, may be capable of meeting the public school curriculum requirements with accommodations such as assistive technology and other resources. Many Special Education students require only periodic sessions with a resource teacher or other professional.

4.4 Students with special needs require some form of adaptation of teaching strategies to meet the regular curriculum outcomes or, when these outcomes are not appropriate, need an Individual Program Plan (IPP). The Department and RSBs have indicated that approximately 3% of the Province's entire student population require an IPP (currently, AVRSB - 3.67%, CCRSB - 1.9%). In those cases, student performance is based on achievement of the outcomes specified in the IPP, not the Public School Program outcomes. These students may also have physical and/or behavioral needs that must be met.

4.5 The Canadian Charter of Rights and Freedoms, Section 15(1), establishes the fundamental right of all students to full and equal participation in education without discrimination including mental or physical disability. This right is reflected within Nova Scotia's Education Act and supporting regulations and forms the foundation for the Statement of Principles included in the Department

of Education's *Special Education Policy Manual* which was published in 1996 and last updated in 1997 (see Exhibit 4.2). The Statement of Principles includes *Inclusive Schooling* which is explained as follows:

> *"The goal of inclusive schooling is to facilitate the membership, participation and learning of all students in school programs and activities. The support services that are designed to meet students' diverse educational needs should be coordinated within the neighbourhood school and to the extent possible, within grade level/subject area classrooms." (Special Education Policy Manual p. 13)*

4.6 In May 2000, the Minister of Education initiated the Special Education Implementation Review to report on the status of implementation of the Special Education Policy. A committee was established with representation from parents, teachers, organizations representing students with disabilities and others. In June 2001, the *Report of the Special Education Implementation Review Committee* (SEIRC) was released. It identified challenges to the provision of special education programs and services in Nova Scotia, and developed recommendations to address those challenges including minimum recommended staffing ratios for various professionals (see Table 4, page 22 of *Report of the Special Education implementation Review Committee*). In 2003, the Department released *Effective Special Education Programming and Services - Response to the Report of the Special Education Implementation Review Committee*. It included a detailed response to each of the 34 recommendations in the SEIRC report.

4.7 In September 2003, the Department released *Learning for Life - Planning for Student Success* which is a three-year plan for public school education. The plan included an emphasis on Special Education and committed an additional $17.4 million in incremental funding over three years for Special Education including $6 million for pilot projects.

4.8 Provision of Special Education services accounted for approximately 11% of Regional School Board operating expenditures in 2003-04. Exhibit 4.4 indicates that the RSBs' 2003-04 audited financial statements report Special Education expenditures of $104.2 million (2002-03, $88.5 million). Exhibit 4.7 shows how the funds were spent. Expenditures at the RSBs, both in total and specific to Special Education, have continued to rise over the last five years while total student enrolment over the same time period has been declining (see Exhibit 4.6).

4.9 The Department provides general formula funding, primarily based on total school enrollment, to RSBs. In addition, the Department provides a restricted grant to assist with the incremental costs of providing quality education to students with special needs. This restricted grant is based on a combination of historical and current total student enrollments, not the number of students enrolled in special education programs. For 2003-04, this restricted amount was $320 per student and totaled $47.6 million (2002-03, $46.1 million) see Exhibit 4.5. This special education grant per student is in addition to the general formula funding which for 2003-04 was $5,563 per student. Formula funding is received for all students regardless of whether they are enrolled in Special Education. The *Special Education*

Policy Manual (Policy 1.3) specifies eligible expenditures for which the restricted grant may be used. Special Education expenditures in excess of the restricted grant are borne by the RSBs and funded by general formula funding and other sources of RSB revenue.

4.10 The Department of Education hired a consultant to undertake a review of the RSB funding formula during 2004. The *Nova Scotia Regional School Boards Funding Formula Framework* (William D. Hogg, CA; December 2004) was released in March 2005 by the Department but has not yet been accepted by government. The report includes a section related to Special Education (page 53) and includes related recommendations and suggestions which are reproduced in Exhibit 4.3 of this Report.

4.11 The Framework report describes the growth in RSB special education expenditures over the past ten years as follows:

> *"For the fiscal year 2003-04, school boards reported Special Education expenses of $105,443,300, representing 11.8% of all school board spending. . . .Compared to expenses reported in 1994-95, costs have increased by 89% or $40,341,000. This significant increase is due to increases in Instruction and Classroom Assistants. Instruction costs recorded in this category have increased 49% in nine years. Over the same time period, spending on salaries for Classroom Assistants has tripled, from $10,986,903 to $34,671,509."* (page 53)

4.12 One of the realities of meeting the needs of all students, required under the Canadian Charter of Rights and Freedoms, is that it is very resource intensive. For example, RSBs have to modify schools to ensure appropriate access, provide private conveyance in some cases and may need to provide medical equipment and other supplies. These costs have not been significant in comparison to total Special Education expenditures. Many of the students with severe needs require help with basic life needs such as feeding and toileting so that they can physically attend school. At the school level, it is primarily teacher assistants (TAs, also referred to as education assistants) who fulfill these student needs.

4.13 This was our first audit of Special Education. It included audit field work at the Department of Education and at two Regional School Boards (the Annapolis Valley Regional School Board and Chignecto-Central Regional School Board).

RESULTS IN BRIEF

4.14 The following are the principal observations from this audit.

- The roles and responsibilities with respect to Special Education programs and services are well documented. There are clear lines of accountability and roles with respect to Special Education programs and services are understood.

- Neither the RSBs nor the Department have readily available information on all students and special education services provided to them to enable

performance measurement and assist in decision making. We acknowledge that this information is available at the school level and that RSBs and the Department are able to request it. The Department and the RSBs should analyze information needs for Special Education and collaborate in the development of a Province-wide student information system.

- The Department of Education requires RSBs to prepare comprehensive annual reports on the Severe Learning Disabilities Program and the Reading Recovery Program. These include information on models of service delivery, student numbers, results of standardized testing and satisfaction surveys. This requirement should be extended to all major Special Education programs and services.

- The Department requires RSBs to conduct annual surveys of compliance with policies at the school level. There is little verification of information reported due to the small number of staff in the Student Services Division at the Department. Also, at the RSBs, there is no formal independent review of the allocation of teaching assistants to students within individual schools. The Department and RSBs should consider conducting more reviews for verification of compliance and sharing of best practices, similar to the Department's review of AVRSB in 1999.

- The RSBs indicated that the issue of liability for performance of medical procedures by Teaching Assistants is a concern. The Department of Education has provided policy guidance to the RSBs with respect to the performance of medical procedures and related training requirements. The guidance suggests that RSBs work with the District Health Authorities to establish protocols to be followed.

- The guidance with respect to how Regional School Boards should account for Special Education expenditures is not clear or complete which limits comparability of financial statements and results in a likely understatement of total costs of Special Education. The Department of Education should improve its guidance to RSBs regarding accounting for Special Education expenditures. A direct costing model should be adopted to ensure that all significant Special Education costs are being appropriately identified, classified and reported on a consistent basis at all Boards.

AUDIT SCOPE

4.15 The major objectives of our audit work at the Department and RSBs were to:

- review and assess the planning (strategic, operational and financial) and monitoring for Special Education programs and services;

- determine plans to deal with identified capacity issues such as wait lists and target staffing ratios;

- document and assess the accountability framework and related performance reporting for the program;
- determine adequacy of information on whether the objectives for Special Education programs and services are being met, and whether the programs are operated with due regard for economy and efficiency;
- document and assess the accounting policies for Special Education expenditures;
- review and assess policies and procedures to ensure compliance with the Education Act and related regulations; and
- document and assess the processes for allocating Special Education resources to individual schools.

4.16 Our initial audit work was conducted at the Department of Education with the second phase consisting of site visits to the Chignecto-Central Regional School Board (CCRSB) and the Annapolis Valley Regional School Board (AVRSB). Our audit procedures included interviews with management, review of relevant documentation, and testing of special education expenditures.

4.17 The objectives of our audit did not include an assessment of the appropriateness of funding being provided by the Department to the RSBs for Special Education programs and services. Similarly, we did not assess the adequacy of staffing in the Special Education area.

4.18 Our fieldwork at the CCRSB and AVRSB included visits to selected schools. We reviewed individual student files for compliance with Department and RSB policies and interviewed school administration. We did not assess whether students' educational needs were being met. Similarly, we did not assess whether educational outcomes for students on wait lists for services were impacted by the delay in receiving such services. We also did not attempt to verify that teachers whose time was allocated through the budget process to Special Education were actually spending the allocated time on that program. We relied on review of assigned case loads and management's representations that those teachers were actually spending the allocated time on Special Education.

4.19 Audit criteria were taken from recognized sources including the Department of Education's *Special Education Policy Manual*, CICA Criteria of Control Board's *Guidance on Control*, the Office of the Auditor General of Canada's *Modernizing Accountability Practices in the Public Sector* and *Financial Management Capability Model*, Treasury Board of Canada Secretariat's *Policy on Transfer Payments*, and the Education Act and related regulations.

4.20 We did not examine programs and services provided through the Atlantic Provinces Special Education Authority (APSEA) to students with special needs. We plan to perform an audit of APSEA later in 2005.

PRINCIPAL FINDINGS

Roles and Responsibilities

4.21 Department of Education - The Education Act and Regulations detail the roles and responsibilities of both the Minister and the RSBs with respect to Special Education programs and services. Department responsibilities include establishing Provincial policy respecting special education programming and services. This responsibility has been assigned to the Student Services Division of the Public Schools Branch. The Student Services Division is led by a Director who reports directly to the Senior Director of the Public Schools Branch. The Director is supported by three consultants, two for Anglophone school boards and one for Conseil scolaire acadien provincial. The Senior Director of the Public Schools Branch reports directly to the Deputy Minister of the Department. Financial management responsibilities such as determination of the RSBs' annual grant is performed by the Corporate Services Branch of the Department. This Branch, as well as the Student Services Division, also monitors the program expenditures of the RSBs.

4.22 The Department has also established the Special Education Program and Services (SEPS) Committee to provide advice and support to the Division in the development and evaluation of policy. This committee includes representatives of advocacy groups as well as the Departments of Education, Health, Justice, and Community Services.

4.23 Regional School Boards - The general responsibilities and powers of the RSBs are defined in the Education Act. Section 64(2)(d) requires that the RSBs "*develop and implement educational programs for students with special needs within regular instructional settings with their peers in age, in accordance with the regulations and the Minister's policies and guidelines.*" The RSBs are accountable to the Department with respect to fulfilling their obligations under the Education Act.

4.24 CCRSB and AVRSB have both created operational units responsible for Special Education programs and services. These units are headed by a Student Services Coordinator who reports to a Director. The Directors have a direct reporting relationship with the Superintendent of the Board. Under the Student Services Coordinator, the CCRSB and AVRSB have different organizational structures for the delivery of Special Education programs and services. The CCRSB has a more decentralized structure where schools are grouped into four families. Each has a Family Student Services Consultant. AVRSB is more centralized and the Special Education Consultants have responsibility for different functional areas rather than Families of Schools.

4.25 Providing Special Education programs and services at the school level is the responsibility of the principal. Classroom teachers, resource teachers, other student services professionals and teachers' assistants provide support to the students. Programming and monitoring of individual special needs students is handled by a program planning team at the school. This team includes the principal or vice-principal, teachers involved with the student, other student

services professionals, parents or guardians and students where appropriate. Exhibit 4.9 includes a chart from the *Special Education Policy Manual* which describes the roles of various parties in the Identification, Assessment and Planning Process related to a special education student.

4.26 Overall the roles and responsibilities with respect to Special Education programs and services are well documented in the organization charts and policy manuals of both the Department and the RSBs we reviewed. There are clear lines of accountability and roles with respect to Special Education programs and services are understood.

Planning

4.27 Department of Education - The annual business plan for the Department of Education is published and is accessible to all stakeholders. The plan includes goals and objectives for the Student Services Division which are clearly linked to *Learning for Life* (see paragraph 4.7). The Department reports to the Minister annually against the business plan.

4.28 The Student Services Division prepares an annual operational plan for Special Education programs and services to address the recommendations of the SEIRC report (see paragraph 4.6) and to fulfill the objectives of the Department's plans.

4.29 Regional School Boards - The RSB business plans are developed based on RSB priorities. RSB priorities may be different in some areas than those detailed in the Department's plans. We found that there were linkages between the RSBs' plans, the Department's plans and the *Learning for Life* initiative. The Department uses targeted funding as a tool for ensuring that its priorities are implemented by RSBs. Therefore, we expected that the RSBs would have explicit plans to address staffing gaps identified by the Department (see paragraph 4.35). We found that CCRSB did not specifically plan to address the staffing gaps identified in the Department's business plan.

4.30 The RSBs had similar short-term planning documents; however, there is a marked difference in the long-term planning documents. CCRSB has a Board-wide strategic plan to fiscal year 2007 which includes goals and priorities relating to Special Education programs and services. AVRSB has completed a more detailed department profile for its Programs and Services department which identified program and service delivery areas of improvement to be addressed in its annual business plans.

4.31 The AVRSB profiling exercise went beyond a self-assessment of compliance to policy. This document identified the specific concerns of the frontline workers providing services to special needs students. Principals, teachers and teacher assistants were asked, among other questions, to discuss the effectiveness of the current service delivery model for students with high needs and how it could be improved. We see the AVRSB profiling exercise as a best practice for RSBs in the area of continuous improvement of programs. Results are used for strategic planning and performance reporting.

Recommendation 4.1

We recommend that all RSBs conduct regular evaluations of Special Education programs with input from all stakeholder groups to serve as a basis for planning and performance reporting.

Performance Reporting

4.32 Performance reporting should provide information on whether students have met the expected outcomes. Performance reporting from the RSBs to the Department for Special Education is based both on statistical surveys and annual reports which are initiated by the Department and completed by the RSBs. Performance reports include:

- the Provincial Student Services Survey;
- the Provincial Student Services Staffing Survey;
- Tracking Our Progress;
- Severe Learning Disabilities annual report; and
- Reading Recovery annual report.

4.33 Provincial Student Services survey - The annual Provincial Student Services survey includes information on the number of students using a particular Special Education service and the number currently waiting for service. We attempted to verify the accuracy of the Student Services survey information at the schools we visited but were unable to do so. School administration indicated that the information provided was based on statistics at a given point in time and would have to be recreated for us. Support for the survey data was not retained. Also the statistics provided by the schools were not always comparable with respect to the date of the information. We also noted that RSB and school staff may not interpret the information request as intended. Department management expressed concern to us regarding the accuracy of the information being provided through the survey especially in the area of reported wait lists for services. The Department does not attempt to verify this information but would investigate anomalies.

4.34 At both RSBs we visited, it was obviously very difficult to obtain information relating to services provided to all special needs students. We acknowledge that this information is available at the school level and that RSBs and the Department are able to request it. However, neither the RSBs nor the Department have readily available information on students to enable performance measurement and assist in decision making. The Severe Learning Disability program and the Reading Recovery Program are exceptions as discussed in paragraph 4.38 below. The student information systems at the school level are not linked to the RSBs or the Department.

Recommendation 4.2

We recommend the Department and RSBs analyze information needs for Special Education and consider the development of a Province-wide student information system to accumulate and report data.

4.35 Staffing surveys - The results of the annual staffing surveys are used by the Department to prepare a staffing gap analysis. This analysis calculates the ratios of current staff to students in special education areas. Those ratios are compared to ratios identified in the SEIRC recommendations (see paragraph 4.6). The Department monitors how funding decisions and actions taken by the RSBs work towards reducing the gap.

4.36 Tracking our Progress - Tracking Our Progress is a self-assessment tool which measures the level of compliance by the schools to certain areas of the Department's *Special Education Policy Manual*. Each school scores its compliance with the criteria listed in the survey, the scores are accumulated by RSB and submitted to the Department. The Department reviews the results for anomalies and trends and uses the information for planning the professional development and policy implementation assistance required for the upcoming year. CCRSB also uses the results for creating its student services operational plan.

4.37 We examined the self-assessments prepared by the CCRSB and the AVRSB for 2003-04. We noted that the CCRSB information was not complete as 12 schools had not responded. It should be recognized that such self-assessments can be somewhat biased and may not always provide complete and accurate information. Although we support the use of such self-assessments, we believe that additional independent verification of compliance should be obtained (see paragraph 4.45 below).

4.38 Annual reports - We noted that neither Department nor RSB business plans include student-specific performance measures. Performance is not required to be specifically reported for any program other than the Severe Learning Disabilities (SLD) Program and the Reading Recovery Program. For those two programs, RSBs are required to submit annual reports to the Department including information on models of service delivery, students, and professional development. Evaluation results such as scores on various standardized tests and satisfaction surveys of students, parents and teachers are also included. We believe that these reports are valuable and that they should be prepared for all major Special Education programs and services.

4.39 RSB staff indicated that reporting for other Special Education programs and services would be more difficult than for SLD and Reading Recovery because not all programs are as well defined. They also indicated that significant resources are required to measure and report performance which would likely require diverting teaching resources from the classroom. Reporting outcomes requires clear definitions of expectations and services to be delivered. We recognize

that reporting performance requires significant resources but we believe that this information is essential for decision making at the RSBs and Department. Legislators and the general public also require performance information.

4.40 The Department prepared a formal response to the SEIRC report in 2003 (see paragraph 4.6). Since then, progress on achieving the recommendations has been updated and monitored regularly and reported to the SEPS Committee which includes external stakeholders (as discussed in paragraph 4.22).

Recommendation 4.3

We recommend that the Department of Education require RSBs to prepare a comprehensive annual report on the performance of all major Special Education programs. The annual report should be made available to stakeholders including the Department, parents, and members of the House of Assembly.

Compliance with Legislation and Policies

4.41 Policies - As noted in paragraph 4.5, the Department developed a *Special Education Policy Manual* which was last updated in October 1997. The manual includes specific policy statements with guidelines and procedures for the RSBs.

4.42 One of the objectives for our site visits to AVRSB and CCRSB was to determine whether the RSBs had policies and procedures in place to ensure compliance with the Department's *Special Education Policy Manual*. We examined RSB policies and procedures, interviewed RSB management and school administration, and tested a sample of student files.

4.43 Both RSBs had written policies and procedures consistent with the Department's policy manual.

4.44 Student files - At each RSB, we selected a total sample of 30 students for review. Our sample was selected to include both students who were working on an IPP as well as those students currently on a resource teacher's caseload. Although we noted that the documentation which existed in the student files varied among schools within the same RSB with respect to students receiving resource help, we were able to conclude in all cases that the applicable policy guidelines were being followed.

4.45 Neither RSB has a formal process in place to verify compliance with RSB policies and procedures at the school level. For example, IPPs are reviewed by staff at both RSBs in conjunction with the process for allocating educational assistants. The primary focus is on whether the student needs the support of an educational assistant, not whether the overall content of the IPP appears to be meeting the educational needs of the student. Although it is not well documented, both Boards indicated that staff review IPPs for content on a regular basis, and that

Board consultants perform classroom visits to assess policy compliance such as how TA resources are being used at the school level. In June 1999, based on a request from AVRSB, the Department completed a review of how AVRSB was using TA resources in schools. A report was prepared which provided recommendations for improvement. Department management indicated that this was the last time such a review was conducted due to insufficient staff resources.

4.46 The Department and RSBs do not receive good information on whether the Department's policies are being followed. For example, the data in *Tracking Our Progress* (see paragraph 4.36) is not verified, and the content of IPPs is informally reviewed. We believe that a review process similar to the review of AVRSB conducted by the Department in 1999 (see para. 4.45) would help to provide better data on compliance and sharing of best practices.

Recommendation 4.4

We recommend that the Department and RSBs reestablish the practice of conducting peer reviews of RSBs for verification of compliance with legislation, regulations and policies and sharing of best practices.

Funding of Special Education Expenditures

4.47 DOE budgeting process - The total funding available to be allocated to all RSBs is determined by the Department of Education through its annual budgeting process. Each fall, the RSBs are surveyed by the Department to identify specific budgetary cost pressures for the upcoming year. The most significant of the cost pressures identified by AVRSB and CCRSB for the 2004-05 fiscal year related to salary increases for both teaching and non-teaching staff. These cost pressures are then accumulated and assessed by the Department for reasonableness.

4.48 Those cost pressures approved for funding by the Department are added to the previous year's total RSB funding to calculate the base funding to be allocated in the current year. In addition to the base funding, additional targeted funding is provided to the RSBs for specific Department initiatives.

4.49 Funding formula - The Department uses a complex methodology to allocate funds to specific RSBs (see page 77 of 2003 Report of the Auditor General for description of the methodology). The calculation is based on student enrolment numbers which are audited annually by the Department. Note that Special Education restricted funding is primarily allocated based on total student enrolment from 1996 - not on the basis of current students at each RSB requiring Special Education services. (See Exhibit 4.3 for consultant's recommendations in this area). Total RSB student enrolments are adjusted to exclude certain groups of students who are ineligible for Provincial funding such as Federally-funded native students and students over 21 years of age.

4.50 The majority of Provincial funds are not restricted and may be used at the discretion of the RSBs for educational purposes, including Special Education program expenditures. In addition, the RSBs receive a restricted grant which may only be applied to Special Education (see paragraph 4.9).

4.51 Special Education grant - Clause 8 (5)(a) of the Governor in Council Education Act Regulations requires that the Minister of Education provide the RSBs with annual funding that includes a specific purpose Special Education grant. Schedule "A" to the regulations provides the detail as to how this grant is to be calculated. The Special Education grant per the regulations is required to be the lesser of the RSBs' previous year's funding enrolment multiplied by $243.90 or the actual cost of special education programs for that year.

4.52 For the fiscal year 2004-05, the Department provided RSBs with Special Education restricted grants totaling $50 million (see Exhibit 4.5). As part of our audit we examined the support for the calculation of the Special Education restricted grant for the AVRSB and the CCRSB in the amount of $5,584,100 and $8,264,100 respectively. Our examination indicated that the regulation was not being followed and that the funding provided exceeded the prescribed amount. For example, using the criteria in the regulation, the special education grant for the AVRSB and CCRSB should have been $4,089,227 and $6,112,378 respectively.

4.53 Department management recognizes the need to update these regulations to reflect the current funding environment and has indicated that there are plans to do so in the near future.

Recommendation 4.5

We recommend that government review and update the Education Act and related regulations to ensure that they reflect the current funding environment.

4.54 For 2004-05, the Special Education grant for each RSB was determined by adding additional targeted funding for specific Special Education initiatives in Learning for Life to the grant provided the prior year. In 2004-05, AVRSB received an additional $199,600 and CCRSB $256,500 to fund additional core professional services, reading recovery and assistive technology. In total, all RSBs received an additional $2.5 million of targeted funding for these specific initiatives. The Department also provided targeted funding for Special Education pilot projects to all Boards totaling $1.4 million, of which AVRSB received $160,900 and CCRSB received $240,000. The RSBs do not always view these items as priorities and have indicated a preference for unrestricted funding.

4.55 Department management indicated that the restricted Special Education grant is not intended to cover all the costs related to Special Education programs at the RSBs. The Education Act requires that a restricted grant for Special Education be provided

and it is viewed by the Department as a minimum that the Boards must spend on Special Education programs. It is important to note that the methodology used to fund RSBs over the years has been evolving and the current formula includes, in the RSBs' general unrestricted operating funding, amounts that were traditionally specified for Special Education. The Department could not demonstrate a formal link between the calculation of the restricted Special Education grant and an assessment of the costs required at the RSB level to provide Special Education programs to students. However, the Department has indicated that, overall, the total amount available for Special Education programs and services (defined as the restricted grant plus the general formula funding per special education student) is approximately equal to the amount reported by the RSBs as expended on Special Education programs and services.

4.56 RSBs believe that the costs associated with Special Education students exceed revenues. For example, one RSB noted that some 18 to 21 year old students have met their IPP outcomes, but return to school because there are few external programs available to them. These students are funded by DOE, but the RSB believes that the associated costs exceed revenues. At AVRSB, there are 29 students who are assigned 98.62 TA hours per day which would have an annual cost of approximately $381,000. The RSB believes that it is not receiving adequate incremental funding to meet the needs of these students.

Budgeting for Special Education at the RSBs

4.57 We examined the 2004-05 budgets for AVRSB and CCRSB and spoke with budget managers from both boards about the budget processes for Special Education. Both RSBs have established processes that include documented roles and responsibilities, consultation, analysis and support for expenditure estimates, and monitoring and forecasting of actual expenditures against the approved budget.

4.58 At both RSBs we visited, budgeting for teacher assistants is more difficult than for teaching staff. Student needs for support change throughout the year for various reasons including accidents, behavioral changes, and moving residences and schools. This can cause fluctuations in the demand for teacher assistants. Both RSBs are aware of such changes and include contingencies in the budgeting process to address these fluctuations.

Allocation of teacher assistants

4.59 The Department's 2003 *Learning for Life* indicates that the number of teachers' assistants (TAs) in Nova Scotia has grown dramatically by 111%, or more than doubled, between 1993 and 2000. During this same period, total school enrolment has declined. The document also indicates that Nova Scotia has more TAs in relation to population than the other Atlantic provinces.

4.60 Department's guidelines - The Department has developed TA guidelines which are intended to provide general direction to RSBs on the use of TAs. The guidelines indicate that TAs should be assigned to meet specific needs in the school and

that TAs should spend some time with all students in the classroom so specific students will not be isolated. There are no specific guidelines with respect to which particular student needs warrant TA services; this prioritization is the RSBs' responsibility.

4.61 RSB allocation process - At both RSBs we visited, the allocation of TA hours to schools is fundamentally based on an assessment of the specific needs of individual students. To prioritize specific student needs, both RSBs have developed three priorities. Students' physical needs are the first priority, followed by behavioral and then cognitive needs. The AVRSB has further defined each area to help clarify the allocation process (see Exhibit 4.8). Management at both RSBs indicated that the decisions made in this area are ultimately the professional judgment of staff based on documented medical, psychological, and academic assessments as well as direct observations of students in the classroom.

4.62 We noted that the CCRSB process is less formal than the process used by AVRSB. At AVRSB, each school is required to prepare a written request detailing hours needed with rationales and relevant supporting documentation to support the request. AVRSB also has a formal appeals process for schools that disagree with the allocated hours. At CCRSB, there is no formal application or appeals process. The allocation process for TA hours at both RSBs is difficult because there may not be sufficient resources to fill identified needs. For example, at AVRSB, for the 2004-2005 fiscal year, schools requested 2006 hours per day of TA time to cover identified needs. Only 1,365 hours per day were approved in the budget, leaving 641 hours per day unfunded.

4.63 The decision on the allocation of TA hours to specific schools at AVRSB is made by the Special Education Consultant at central office. At CCRSB, the organizational structure is more decentralized and the decision is the responsibility of the Family of Schools Consultant. The CCRSB Consultant receives a number of TA hours for allocation to schools within the family based on percentage of total RSB enrolment. At the AVRSB, allocation to schools is determined through the application process detailed in the preceding paragraph.

4.64 At both RSBs, we examined the detailed documentation supporting the allocation of TA hours to three schools. The allocation process appeared to be working as described to us. We did note at CCRSB that some students who were assessed as not falling within the criteria described to us were receiving TA hours. The CCRSB Consultant explained that, in some circumstances, a student's needs may not neatly fall under one of the criteria listed but, without TA support, the student would very likely not be able to stay in school.

4.65 The principals at the schools are informed of the total number of hours available to the school. The AVRSB also informs each school of the number of hours allocated to each student. At both RSBs, it is ultimately the decision of the principal or delegated staff as to the distribution of TA staff and hours. Exhibit 4.8 is an example of the policy framework set by AVRSB to provide guidance to school staff on the allocation of teaching assistants. As an example, schools may be able to

bundle students so that a TA is able to provide support to several students at once, therefore more effectively using allocated hours. Neither of the RSBs has a formal process in place to monitor the use of TA hours at the school level to ensure they are being used in the most effective manner possible. More reviews similar to the 1999 Departmental review of AVRSB (see para 4.45) could be beneficial in establishing whether all RSBs use teacher assistants wisely and enable sharing of best practices.

4.66 Liability for medical procedures – The RSBs indicated that the issue of liability for performance of medical procedures by TAs is a concern. TAs are often required to perform medical procedures for which they have little formal training such as catheterizations and injections. One of the RSBs indicated that organizations which provide such training are even reluctant to train the TAs because of liability issues. The Department has issued guidance to RSBs to assist in negotiations with District Health Authorities (DHAs) of a protocol to address these concerns. The protocol is to set out the range of specific medical procedures required and the associated provider and training. Department management has indicated that currently only the South Shore Regional School Board has documented a formal protocol. It should be noted that the process is cumbersome because the DHA boundaries are not the same as the RSB boundaries. Therefore, it is likely that one RSB would have to negotiate with more than one DHA. AVRSB management indicated that they believe RSB staff should not be required to provide any medical procedures as these are public health issues.

Recommendation 4.6

We recommend that the RSBs negotiate with the District Health Authorities to establish a documented protocol with respect to the performance of medical procedures. Where the procedures are to be performed by teacher assistants, related training needs should be addressed.

Accounting for Special Education Expenditures

4.67 The Department's *Special Education Policy Manual* (Policy 1.3) provides details of eligible Special Education expenditures for purposes of the restricted grant. The Department also has a *RSB Financial Accounting Handbook* (draft) which provides additional guidance for recording expenditures including Special Education program expenditures. The RSBs record all expenditures using a common financial system (SAP) and chart of accounts which help to provide information that is comparable among RSBs.

4.68 We tested a sample of Special Education expenditures recorded in the financial statements of AVRSB and CCRSB for the fiscal year ended March 31, 2004 for compliance with the Department's *Special Education Policy Manual*. Under the *Special Education Policy*, Boards are permitted to prorate costs. As noted in paragraph 4.18, we did not verify whether teachers whose time was allocated through the budget

process to Special Education were actually spending the allocated time on that program.

4.69 All sample items tested at the CCRSB were found to be in compliance with the manual. We were not able to conclude on a number of our sample items at the AVRSB relating to teaching staff salaries. The AVRSB records Special Education expenditures related to teaching staff based upon the average teacher's salary for the year multiplied by the full-time equivalent (FTE) Special Education positions approved in the budget. This calculated expenditure is not adjusted at year end to the actual amount. Although we were able to determine that the FTE and average salary numbers used in the calculation were accurate, we were not able to determine the actual expenditures and, therefore, the significance of the difference is not known. For example, the average salary for Special Education teachers may be higher or lower than the average Board salary. Any difference between the estimate and the actual costs is effectively recorded as costs of regular instruction rather than Special Education.

4.70 It must be recognized that the RSBs spend much more on Special Education than the amount of the restricted grant. Therefore, any differences in recording such expenditures do not impact the amount of the Special Education grant. However, AVRSB's process of estimating expenditures impairs comparability among RSBs and does not give the Department and Board the most accurate information for decision making. Since the guidance in the *Special Education Policy Manual* is not specific and permits costs to be prorated, we are unable to comment on whether AVRSB's accounting methodology complies with the spirit of the policy.

4.71 The Department's *Special Education Policy Manual* details those costs that can be reported as Special Education expenditures. These are limited to direct costs of personnel, travel and equipment and materials (excluding medical supplies). The policy excludes expenditures such as student transportation, medical supplies, modifications and renovations to buildings, administration time of principals and vice-principals at the school level, and regular classroom teachers' time.

4.72 Students with special needs require more than their proportionate share of the costs of transportation, board administration, school administration, and teaching resources. At present many of these expenditures are not being allocated to Special Education so the direct cost of providing Special Education is not fully known. Without a direct costing model in place, the RSBs' and Department's ability to compare and assess service delivery models and make the most appropriate cost-effective decisions in respect to the delivery of Special Education services is compromised.

4.73 RSBs do not have systems in place to determine the costs associated with the provision of specific programs within the Special Education umbrella. For example, the costs associated with resource programming are not tracked separately from those associated with IPP students or gifted students.

Recommendation 4.7

We recommend that the Department of Education improve its guidance to RSBs regarding accounting for Special Education expenditures to specifically describe which costs can be charged and how they are to be calculated. A direct costing model should be adopted to ensure that all significant Special Education expenditures are being appropriately identified, classified and reported on a consistent basis at all Boards.

Tuition Support Program

4.74 In 2004, the Governor in Council regulations under the Education Act were changed to establish a tuition support program for students with specific needs (i.e., Attention Deficit Disorder, Attention Deficit Hyperactivity Disorder, Autistic Spectrum Disorder or Learning Disability) who attend designated special education private schools (DSEPS). The student may be eligible for support equal to the average per student allocation of combined Provincial and municipal funding to school boards, as of March 31 of the previous fiscal year. Any shortfall between the tuition charged by the private school and the funded amount is the responsibility of the student's family. The program includes a requirement for transition planning to support the student's eventual return to the public school system although that component is not yet operational.

4.75 For 2004-05, the first year of the program, the projected Department expense is $399,600.

4.76 We reviewed controls in place over the applications for grants under the newly formed Tuition Support Program. We selected a sample of students who received tuition support for 2004-05 and tested the process followed to determine compliance with the criteria outlined in the regulations. We also tested the designation process followed for the three schools assigned DSEPS status. We found no errors as a result of our testing.

Interviews of School Administration

4.77 As part of our audit, we interviewed school administration at six schools, including elementary, middle and high school levels. In addition to questions regarding specific operational issues, we also requested general comments relating to Special Education programs and services. We did not attempt to verify responses. See Exhibit 4.10 for a summary of the more significant comments.

CONCLUDING REMARKS

4.78 Implementation of the Special Education policy began only ten years ago. The Department of Education and RSBs still encounter challenges on a daily basis to ensure that students that most need Special Education services are receiving the supports they require to succeed. The demand for Special Education services is

high and program costs are increasing. Not every identified need can be met. In this environment, prioritization processes are very important and should be based on appropriate, reliable information about demand, services offered, educational outcomes and costs.

4.79 The Department of Education's Student Services Division attempts to collect information on programs and outcomes. However, there are no formal systems in place to generate this information. The information is primarily collected by annual surveys. The *Tracking Our Progress* survey is a positive initiative because the RSBs and schools undertake a comprehensive self-assessment of Special Education. However, the information provided is not verified and is sometimes incomplete.

4.80 We are concerned with the overall quality of the financial and student specific information available to management for the Special Education program. For example, we could not determine all direct costs of offering Special Education programs at the RSBs audited, or the number of students waiting for services. Information that is accurate, timely and complete is essential to effective decision making and improvements are needed. Better quality information should enhance the business planning process and enable both the Department and RSBs to assess the needs of Special Education students and make better decisions with respect to meeting those needs.

Exhibit 4.1

Glossary of Special Education Terms

Adaptations - are changes in a student's program which relate primarily to the methods of instruction and evaluation, but which do not change the expected outcomes of learning as provided in the provincial curriculum.

Assessment - is a process of gathering information on student learning, needs, strengths and/or difficulties. Assessment procedures may include the use of formal and/or informal strategies and instruments.

Curriculum Outcomes - are statements in the Public School Program (PSP) document that identify what students are expected to know or be able to do.

Exceptionalities - are identified significant differences in growth and/or development as compared to that which is considered normal, and include cognitive and emotional impairments, behavioural disorders, learning disabilities, physical disabilities and/or health impairments, speech impairments and/or communication disorders, sensory impairments (vision, hearing), multiple disabilities and giftedness.

Individual Program Plan (IPP) - is an educational plan developed by the Program Planning Team for any student for whom the provincial curriculum outcomes are not applicable and/or attainable.

Policy - refers to general statements which articulate beliefs/values and create a framework within which those affected can carry out their responsibilities. Policies describe what is expected and why.

Procedures - are detailed directions which describe and define the "how", "by whom", "when", "where" and "in what form" things will be done.

Public School Program (PSP) - is a Department of Education document which describes the curriculum, programs and services to be provided in Nova Scotia schools, and expected learning outcomes for students.

Severe Learning Disabilities (SLD) - this term refers to students with average or above average cognitive ability who are achieving at a level which is significantly below the expected level in language arts and/or mathematics. The delay is not primarily the result of other factors, such as cultural differences, social/emotional/behavioural problems, general cognitive impairment, family factors, sensory or physical disability.

Special Education Policy Manual - Statement of Principles

Exhibit 4.2

Right to an Appropriate Education
A right to an appropriate education means the fundamental educational human right of every individual to have their unique learning needs responded to on an individual basis.

Right to Quality Education and Qualified Teachers
All students have a right to be taught by licensed, qualified teachers who are responsible for ensuring that the objectives of the program match, as much as possible, student strengths and needs.

Inclusive Schooling
"An inclusive school is a school where every child is respected as part of the school community, and where each child is encouraged to learn and achieve as much as possible…a place where all children could learn and where differences are cherished for the richness that they bring".

The goal of inclusive schooling is to facilitate the membership, participation and learning of all students in school programs and activities. The support services that are designed to meet students' diverse educational needs should be coordinated within the neighborhood school and to the extent possible, within grade level/ subject area classrooms.

Teachers Responsibility
Teachers are responsible for all students who are placed under their supervision and care. This includes responsibility for safety and well being, as well as program planning, implementation and evaluation.

Parental Involvement
Parents have an obligation and a responsibility to be an integral part of their child's education and should be involved in program planning from the outset.

All students are expected to achieve the common essential learnings as stated in Public School Programs, 1993-95 to the best of their individual abilities. Within the broad outcome areas each student's goals will reflect the diversity of their individual strengths and needs.

Individual Program Plan and Accountability
For some students, individual program plans are necessary (Policy 2.2). The development and implementation of Individual Program Plans (IPP's) strengthens student/teacher accountability. Students work toward goals outlined in the IPP and this forms the foundation for the evaluation of student outcomes. The evaluation of outcomes is a component used in measuring school success; however, many other variables will need to be considered.

Collaboration
Collaboration and consultation is essential in supporting students with special needs to ensure a coordinated and consistent approach to program planning and service delivery.

Exhibit 4.3

Extract from Nova Scotia Regional School Boards Funding Formula Framework (December 2004, page 59)

Recommendation

The funding formula for Student Support should comprise the following:

1. The teaching-professional services component of Student Support should be funded using the student to teacher ratios published in the SEIRC Report (1:165; 1:2000; 1:2500; and 1:7000) [Note 1]. The full time equivalent resources determined from the application of the ratios should be funded at the average teacher salary amounts per board.

2. An incidence rate of students requiring extensive supports should be used to determine the population against which the student to teacher ratio for Special Education professional (1:10) should be applied to determine full time equivalent teaching resources required. The resources required should be funded at the average teacher salary amounts per board.

3. Teaching assistant resources should be estimated using student to teacher ratios such as those referred to in the SEIRC Report. These ratios would be applied to the enrolment of a school board. The resulting resources should be funded at a provincial average salary amount.

4. For each calculated student requiring extensive supports, a dollar amount should be provided for support material.

Suggestions

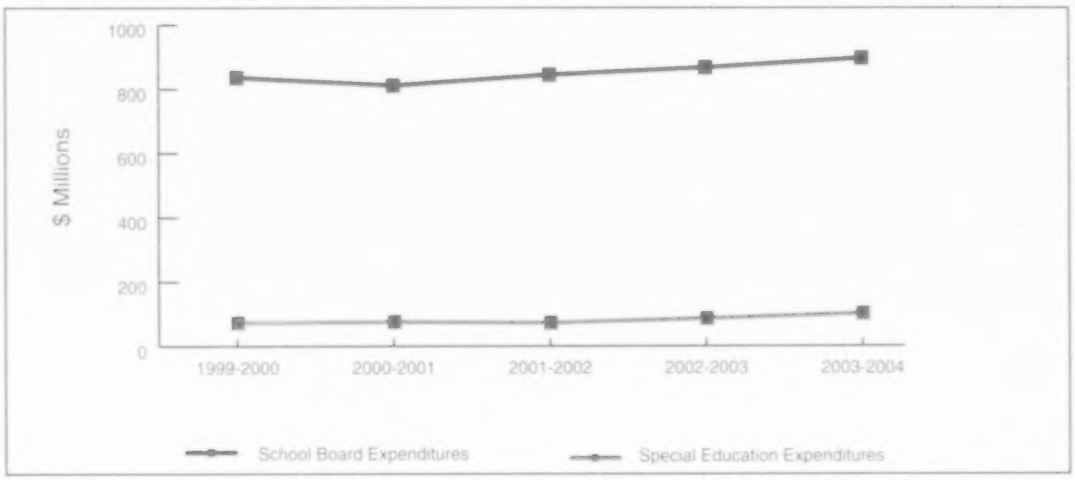
The impacts of the recommended funding approach should be monitored to determine if a detailed classification system, with funding tied to each classification, would be an improvement to the recommended approach taking into account the increased administration required by the Department and school boards.

Consideration should be given to more current surveys of students requiring extensive supports, using the working definition of the Student Support branch, and of the relationship of teaching assistants to enrolment.

(1) – Ratios relate to services of teaching-professional staff including Resource, Speech/Language, Psychology and Educational Assessment, and Student Services Administration – see Table 4 page 22 of SEIRC report.

Total Special Education Expenditures and Total RSB Expenditures By Year

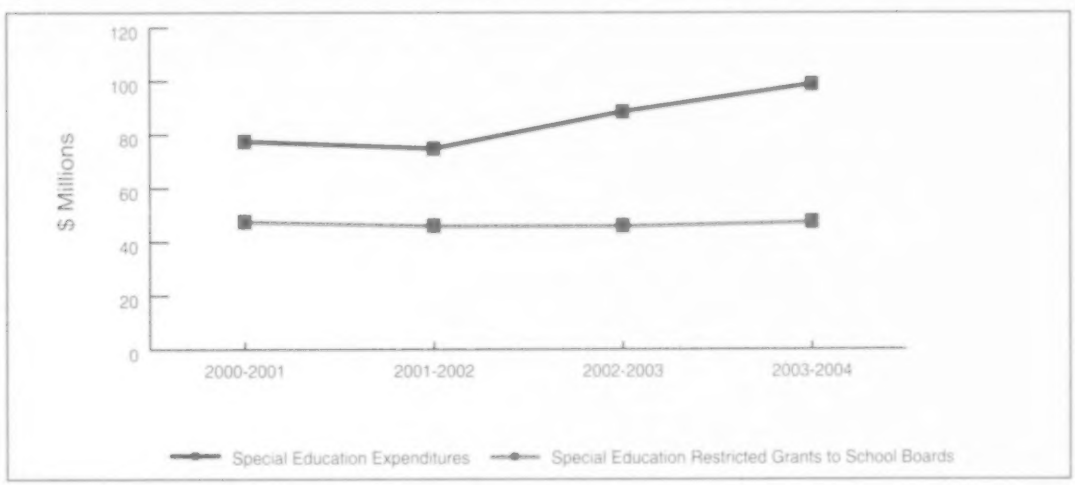
Exhibit 4.4



Source: 1999-2003 Department of Education statistics
2003-2004 Regional School Board audited financial statements

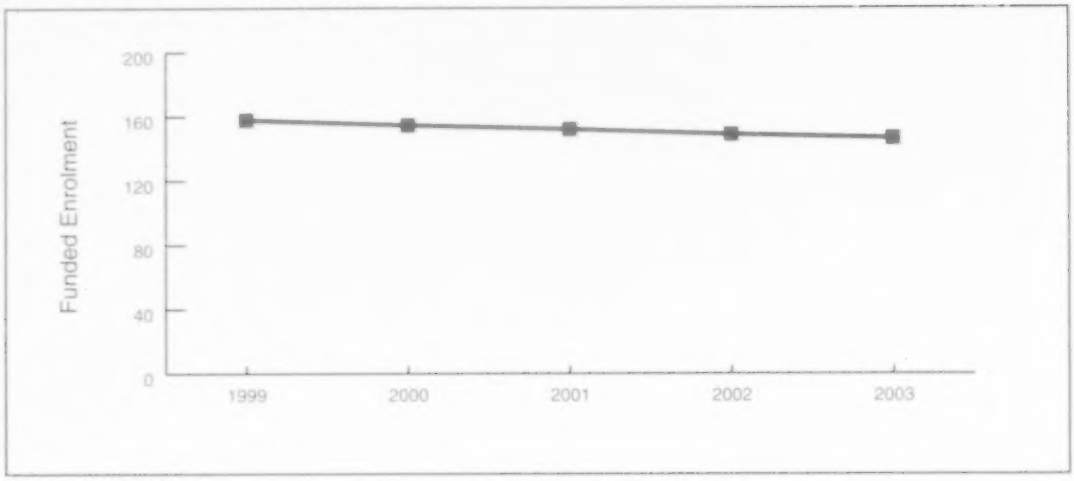
Special Education Expenditures and Special Education Grants

Exhibit 4.5



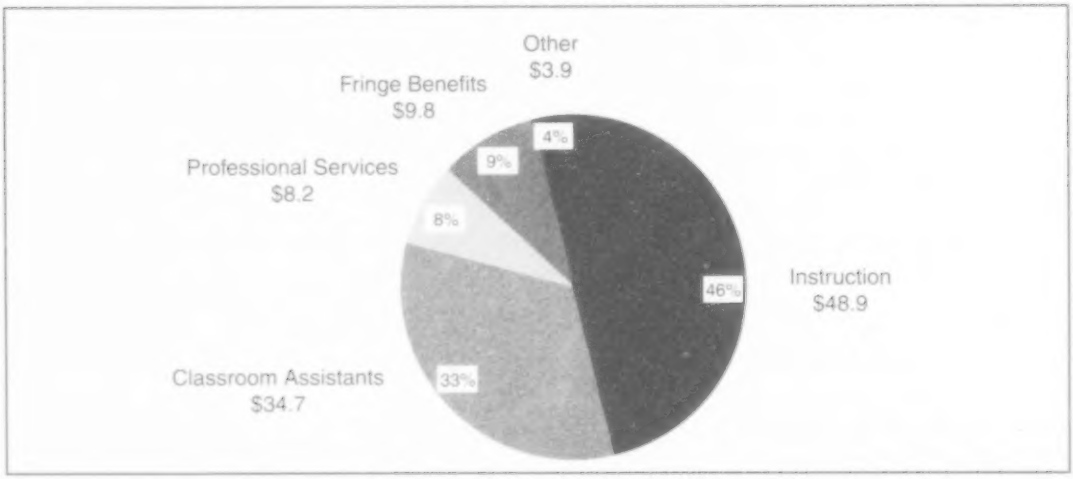
Source: Department of Education
2003-2004 Expenditures - Regional School Board audited financial statements (does not include Halifax RSB Special Education expenditures from supplementary funding).

Exhibit 4.6 **School Board Funded Enrolment by Year (in thousands)**



Source: Department of Education

Exhibit 4.7 **2003-04 Special Education Expenditures ($ millions)**



Source: Nova Scotia Regional School Boards Funding Formula Framework; William D. Hogg, CA; March 2005

AVRSB Guidelines for Educational Assistant Allocation at the School Level

Exhibit 4.8

For a small number of students, Education Assistant (EA) hours may be needed to support the implementation of an Individual Program Plan (IPP). The School Administration, in consultation with staff, is responsible for allocation of EA time in accordance with these principles:

1. EA support is intended to maximize the independence of the student.

2. EA support will be used to achieve the maximum level of inclusion in regular instructional settings.

3. While adhering to sound inclusive practices, classroom assignment and scheduling of students must be considered to achieve the most efficient and effective use of EA time.

4. Allocation of EA support will remain flexible in order to respond to changes in students' needs.

5. EA support will be allocated in adherence to the regional allocation principles and priorities:

   In order to respect the rights of all children to attend school,

   A. First priority will be given to students for the following reasons:
      - Personal health and safety arising from a medical/health condition
      - Personal health and safety arising from a profound developmental delay
      - Needs assistance with toileting, mobility, feeding and/or medical procedures
      - Require continuous supervision due to a severe disorder

   B. Second priority will be given to students who continuously exhibit extreme aggressive or dangerous behaviours that:
      - Endanger the safety of self and/or others,

      AND
      - Result from identified medical or psychological condition,

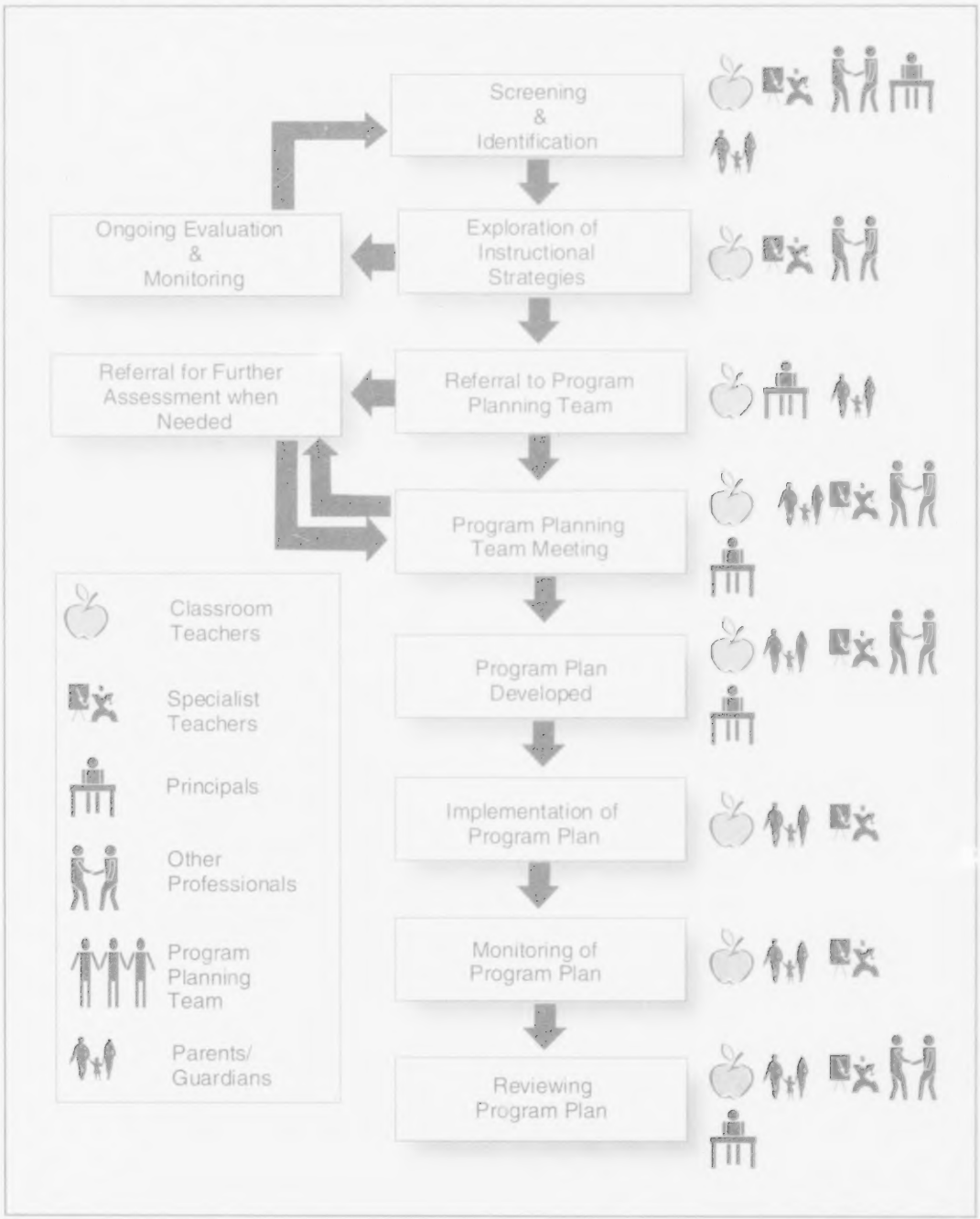
      AND
      - Have received interventions through the program planning process, such as implementation of a behaviour management plan and involvement with outside agencies.

   In order to respect the rights of all children who temporarily need support to stabilize program,

   C. Third priority shall be given to those students who:
      - Require critical support to achieve IPP outcomes in communication, daily living and/or self-help skills, which are substantially different from the provincially prescribed curriculum.

Exhibit 4.9

Identification, Assessment and Program Planning Process (from Special Education Policy Manual, page 41)



Summary of Comments from Interviews of School Administration

Exhibit 4.10

- Overall, administrators were satisfied with the level of support provided by the RSB in light of RSB financial constraints.
- RSB policies and procedures are clear, although some concern was expressed over the time required to complete necessary documentation.
- Overall, administrators feel they are meeting the physical and behavioral needs of students, but not fully meeting the cognitive needs especially those with more moderate needs and gifted students.
- More resources are needed especially in the areas of resource teachers and teacher assistants.
- There are not many programs outside the public school system for students between 18 to 21 years of age who require IPPs. These students consequently stay in school and place a high demand on resources.
- Teacher training and professional development could be more focused and timely.
- All believed that, based on resources provided, they were doing a good job; only anecdotal evidence could be provided.
- Various opinions were expressed on what constitutes success with respect to the education of students with special needs. Suggestions included meeting outcomes, graduating from high school, and being employable.

ANNAPOLIS VALLEY REGIONAL SCHOOL BOARD'S RESPONSE

The Annapolis Valley Regional School Board staff was pleased to support the "Special Education Audit" process. The provincial audit team was receptive and understanding of particular circumstances related to the collection of data and other organizational challenges. The follow-up meeting at which we were able to review the draft report and provide additional information to clarify specific areas was also appreciated.

We are concerned that the time-line for presenting the draft report and the deadline for this response did not allow for input and feedback from the elected Board.

We agree in principle with the recommendations related to increased regular comprehensive reporting (4.1, 4.3), and the AVRSB has been moving in this direction. However, we are greatly concerned with the time, cost, and reduction in direct service to children and youth that would be associated with the depth and frequency of reporting and the evaluation suggested in the recommendations. For example, the recommendation that student services staff prepare an annual report for *all major special education programs* similar to the report completed by the Severe Learning Disabilities Program is unfeasible. The Severe Learning Disabilities Program report is very comprehensive and involves an initial assessment followed by a final yearly assessment for each student. The Severe Learning Disabilities staff each carries a caseload of 12 to14 students at any given time and works with individual students two hours per week. They are able to complete the individual assessments because of the limited numbers of students they serve. School psychologists and speech language pathologists screen and assess hundreds of students each year. They carry extreme caseloads and are not able to provide direct service to each student. Their service is composed of many different aspects and it would not be possible to have them prepare a report similar to the Severe Learning Disabilities Program. It is important to distinguish between the evaluation of a *program* such as the Severe Learning Disabilities Program, and the evaluation of a *service*, such as Speech Language Pathology and School Psychology.

We are very supportive of the development of a province-wide student information system (Recommendation 4.2). There is increasing evidence that one provincially developed and maintained system would greatly enhance tracking and access to data. There is a very high level of frustration at the school and regional levels with the lack of such a system and with the resulting expenditure of time and energy in the repeated inefficient collection of data.

We are pleased with the results of our Programs and Services planning process and

agree in principle to the continuation of this approach (Recommendation 4.1). However, this is an expensive and time-consuming process that must be conducted by individuals with expertise in data generation and analysis. This process would have to be subsidized by the Department of Education if it were to be carried out on a regular basis.

We would also welcome an ongoing peer review process (Recommendation 4.4). There are concerns with consistency within and among school boards, and a coordinated peer review process could enhance the sharing of best practices, increase consistency and support a more equitable distribution of funds to schools boards. We are, however, greatly concerned with the impact of this in terms of staff time. The Board could not dedicate existing financial and human resources to this without having a significant negative effect on service to children and youth.

We are very pleased with the attention in the report to issues of medical supports for students (Recommendation 4.6). While we recognize the complexity related to services under the jurisdiction of the various District Health Authorities, we believe that the health of children and youth is and should continue to be the jurisdiction of the Department of Health - not the school boards. Our recommendation is that the provision of medical services to children and youth be organized, coordinated, funded, and carried out by health professionals under the jurisdiction of the Department of Health. The AVRSB includes two different District Health Authorities. It is essential that services be consistent. To be clear, when a student requires a medical procedure, it should be carried out by a fully qualified health professional. It is inappropriate and unreasonable to expect an educational/ teacher assistant to be trained to carry out such procedures. The recommendation of the Department of Education that each of the Regional School Boards negotiate with the District Health Authorities to attempt to provide essential medical services to children and youth effectively places the responsibility for medical services in the hands of the School Boards. This is an urgent issue that must be addressed. Simply put, children and youth have the right to be in school. School Boards have the obligation to educate the children and youth. Health is responsible for providing the heath care needed. We are very concerned that an audit of Special Education services at the School Board level would result in a recommendation that would effectively make the School Boards responsible for the provision of health services.

We support the need for the Education Act and regulations to be up-to-date (Recommendation 4.5). We also support the need for consistent accounting practices

throughout the province (Recommendation 4.7). This would allow for fair and accurate comparisons of expenditures.

We believe it is essential to highlight concerns related to the provision of Special Education services to specific students between the ages of 18 and 21. While some students continue to work towards their individual outcomes to the age of 21, there is a significant number who return to the public system after they have graduated or reached their potential primarily because there are no options for them in the community. To state it clearly, if these young adults had appropriate and better options for transitioning to the community they would not stay in the public school system until they are 21. The money saved would then be available for early intervention support.

We have calculated the costs of Educational Assistant hours for 2003-2004 and they are included in the report. It is important to note that there are additional costs related to transportation and the provision of services by outside agencies. We provided the auditors with detailed information on specific students who have graduated or reached their potential within the school system, but who return to school year after year because there is a lack of alternatives for them. We are disappointed that there is no recommendation that the Department of Education work with provincial agencies that hold the mandate to provide appropriate placements and services for these adults to develop and fund a long term plan. Without ownership and partnership at the provincial level, school boards are left with a significant financial and social responsibility for services that are not in the best interest of these 18 to 21 year-olds.

We would like to clarify the procedures regarding Educational Assistant usage within the AVRSB that were not captured in the report. As part of our regular procedures, the Consultant of Student Services, the Behaviour Intervention Consultant, and the Coordinator of Student Services visit schools throughout the year to review the allocation of Educational Assistant hours. They meet with administrators and teachers to discuss any issues resulting from the allocation process and collaborate with them to design schedules that best utilize the hours allocated to the school to ensure appropriate usage of human resources. As well, the Consultant of Student Services communicates with each school during the allocation process in the Spring to clarify the roles and responsibilities of the Educational Assistants and to determine priorities at the school level. There is close follow-up and school visits to ensure best practices and procedures for Educational Assistant responsibilities.

We understand that the parameters for the work of the audit team did not allow for

the inclusion of any data that could not be verified in detail on a student-by-student basis. However, we are disappointed that the increasing number of requests from schools for student assessments and referrals for interventions that cannot be met could not be captured in the audit. We are also concerned that the number of referrals may be misinterpreted. Schools have learned that only students with severe needs will receive support and that using valuable time to complete paper work on other students who could and should have support does not, in many instances, result in intervention. As a result, many students who have a right to support are not captured in any tracking process.

We are relieved that the auditors acknowledge that the percentage of students in the AVRSB who need an Individualized Program Plan is above the provincial average. This verifies and supports anecdotal evidence that we have collected for a number of years. We believe that this factor should be considered in the distribution of Special Education funding.

In closing, we would like to thank the members of the audit team. We greatly appreciate their professional and caring approach to carrying out their mandate.

CHIGNECTO-CENTRAL REGIONAL SCHOOL BOARD'S RESPONSE

Chignecto-Central Regional School Board welcomed the opportunity to share information on special education delivery with the Department of the Auditor General. Staff found the experience supportive and positive and gained insight from the questions posed by the auditors.

Delivering special education services to special needs students in an "inclusive" classroom is but one component of the teaching/learning responsibilities expected of a teacher each day. It must have been a challenging exercise to apply the targeted "accountant's eye" to that complex learning environment.

We would like to comment on only two of the articles found in the Report.

4.29 CCRSB acknowledges that in the year under review, a specific plan to address staffing gaps as identified by the Department of Education could not readily be provided. But the gap was being addressed, at least to some degree. CCRSB, in its staffing regimen for 2005-06, is more agressively moving to close the gap and has already submitted such verification to the Department of Education.

4.62 As indicated, CCRSB does not have a "formal application or appeals process" for the allocation of TA hours. But indeed a process does exist. It is collaborative and involves site-based staff as well as Regional Student Services staff. Our process has worked well in ensuring the Board fully understands the magnitude of the demands at school sites and in ensuring that, in turn, appropriate support is provided.

Thank you for this opportunity to respond to what we believe is a constructive report on this component of the Board's educational responsibility.

DEPARTMENT OF EDUCATION'S RESPONSE

Thank you for the opportunity to provide a response to your staff's recent review of special education.

The report identifies the legal framework within which special education programs must be delivered; and the policies and systems that support the implementation of these programs. The report emphasizes the importance of accountability and monitoring of special education programs and services at both board and school levels.

The Department acknowledges and supports this emphasis and continues to be actively involved in establishing procedures and mechanisms in this area.

It must be noted, however, that the monitoring of individual outcomes, supports and services for approximately 20,000 students is a complex process and presents methodological challenges that are currently the focus of student services departments in provinces across Canada. The Nova Scotia Department of Education is the first department in Canada to pilot a standard reporting process and provincial report card for students with individualized program plans. We will be sharing this with our Canadian counterparts later this fall to obtain input in order to continue the process of refining this methodology.

Other monitoring and tracking tools include student specific Literacy Support Plans which are developed in relation to the provincial language arts assessments and follow students as they progress through school; Behavior Incident tracking forms, which monitor all discliplinary referrals and subsequent interventions at school level; evaluations of new initiatives and targeted funding through Learning for Life; and the introduction of student services planning and monitoring into the board business plans and school improvement planning processes.

Regarding report recommendations related to funding, it is important to underscore the progress that has been made in revising the public education funding allocation formula. Also, additional targeted funding was provided to school boards in the 2005/06 budget to address special education issues.

Regarding the existing funding formula, the department has prepared the appropriate regulations and will be submitting them for Governor in Council approval.

As indicated in your report, a review of the funding allocation formula undertaken by Mr. Bill Hogg CA was provided to the government for consideration. The government has indicated that it wants to consult further with school boards before finalizing a new approach to funding, anticipated to be adopted for the 2006/07

fiscal year. When the new allocation formula is finalized the Department will ensure that the appropriate Acts and regulations are revised to provide authority for the new allocation formula. Further, the recently issued *School Board Financial Handbook* provides the means to update financial recording and reporting practices among the boards to ensure consistency - both among boards and with any new allocation and funding formula - in order to provide useful information for governing bodies. The recommendations of your report will be considered in this process.

The department looks forward to continuing to improve our processes and procedures in all areas including special education and thank the Auditor General's office and staff for their input in this regard.

5 PENSION ADMINISTRATION SYSTEM (PENFAX)

BACKGROUND

5.1 The Minister of Finance is assigned responsibility for the administration of the Public Service Superannuation Fund (PSSF) by the Public Service Superannuation Act. The Minister of Finance is also appointed as Trustee and is assigned responsibility for general supervision and management of the Nova Scotia Teachers' Pension Fund (NSTPF) by the Teachers' Pension Act. While the Minister is also responsible for other pension funds or accounts, this audit focused on the new pension administration computer system, Penfax, and its related controls, which, at present, is used in the administration of the PSSF and NSTPF.

5.2 The Minister of Finance has delegated, through the Deputy Minister of Finance, administration and management of the pension administration systems to the Pension Services Group(PSG) of the Department of Finance. To assist in the performance of its duties, the PSG implemented the new Penfax system. The Penfax system is primarily a data storage and calculation software. Its function is to accurately record and store all details of the employment history of a plan member, including pension contributions, salary history and service history, and to calculate the pension, commuted value and other information as required.

5.3 The Penfax system has been in a prolonged implementation phase over the past seven years with various problems preventing full operation of the system. We commented on these matters in Chapter 3 of the June 2004 Report of the Auditor General (see paragraphs 3.11 to 3.18), with further commentary in Chapter 3 of the December 2004 Report of the Auditor General (see paragraphs 3.22 to 3.25).

5.4 The original Penfax project commenced in August of 1998. The initial target completion date is not clear from the original contract but appears to have been June 30, 2000. We have been informed that the revised project, known as the Penfax Completion Project, has now been completed as at March 31, 2005. Exhibit 5.1 on page 78 contains a system overview chart.

5.5 The original budget estimate for Penfax was $1,208,000. We have been informed that the costs of the Penfax project to July 2004 were $4,342,738 and the costs of the Penfax Completion Project from that date to completion were $378,911.

5.6 The original project was not reviewed or approved by government's Business Technology and Advisory Committee (BTAC), and did not have a steering committee in place until the end of 1998, approximately six months after the project had started. As a result of problems in the management of the Penfax project, it appears that the original steering committee was quite ineffective.

5.7 An assessment of the status of the Penfax implementation was prepared in July 2004 by the external contracted project manager of the Penfax Completion Project, and submitted to the new steering committee that had been formed to oversee that project. This assessment reported that:

- Of 23 originally contracted deliverables, 19 were delivered but 8 of these still had problems to be resolved.
- 56 change requests were raised through the project. All have been resolved.
- A total of 14 deliverables were identified to complete the project.

5.8 The Penfax system does not manage the investment of the pension funds nor does it perform the pension payroll functions. These two aspects are managed separately from the Penfax system. We reported separately on Pension Asset Management and Governance of Retirement Benefits in Chapter 5 of the December 2004 Report of the Auditor General. As of April 2005, the pension payroll function is being converted to the new SAP Human Resources module as part of the government's eMerge project.

5.9 The following statistics have been extracted from the most recently published actuarial reports on the funds. These reports are for the year ended December 31, 2003.

	Nova Scotia Teachers' Pension Fund	Public Service Superannuation Fund
Annual Contributions	$155,513,000	$73,000,000
Active Members	13,065	14,018
Retirees and Beneficiaries	8,815	10,094

RESULTS IN BRIEF

5.10 The following are our principal observations presented in this chapter.

- The controls for the general computer environment for the Penfax system were assessed as being adequate. There are some areas where improvements should be made.
- The controls over completeness, accuracy, authorizations and the adequacy of management trails were assessed as being adequate. There are some areas where improvements should be made.
- As the Penfax Completion Project final report is still in progress, we have not had an opportunity to review the final assessment of the deliverables of the Completion Project. We have recently been informed by management that the cost of the Penfax Completion Project was $378,911.

- The cost of the Penweb component, which was added to the original Penfax project scope in December 2001, was approximately $1,000,000. This does not include the cost of PSG staff working, often full time, on this project. The Penweb component was not completed and implemented. The government and the pension funds have received little or no value for the money expended on this element of the project.

AUDIT SCOPE

5.11 The objectives of this audit were:

- General computer controls - to review and assess the adequacy of the controls for the general computer environment; and
- Application controls - to review and assess the adequacy of controls over the processing of computer applications, focusing on the completeness, accuracy and authorization of transactions as well as the adequacy of management trails.

5.12 Audit criteria were developed to assist in planning and performance of this audit (see Exhibit 5.2). These were primarily derived from the Canadian Institute of Chartered Accountants' *Information Technology Control Guidelines*. The criteria were discussed with senior management of the PSG and were accepted as appropriate.

Additional Coverage

5.13 We reviewed the activities of the PSG in addressing the findings of the independent audit report of March 6, 2004 on the Pension Administration System Implementation Project.

5.14 We reviewed documentation concerning Penweb, a component of the Penfax implementation project added to the original scope of the project in December 2001.

5.15 We enquired as to the status of the interface between the pension administration system and the eMerge project.

PRINCIPAL FINDINGS

General Computer Controls

5.16 General computer controls are controls which relate to the environment within which computer applications are developed, maintained and operated. They apply to all the computer applications of an entity. The objectives of general controls are to ensure the proper development and implementation of applications, and the integrity of program and data files and computer operations. Examples of general computer controls would include:

- policies and practices regarding physical environment such as air conditioning, fire protection, etc.;
- policies and practices regarding access control, specifying who may approve access to the system by users;
- policies and practices regarding changes to the computer system or its programs; and
- procedures defining the back-up of data.

5.17 General conclusion - The results of our audit indicate that in 2004-05 the controls for the general computer environment for Penfax were adequate. There are some areas where improvements should be considered and these are described below.

Disaster Recovery and Business Continuity Planning

5.18 At present, the PSG has neither a disaster recovery plan nor a business continuity plan. The lack of these plans could cause an interruption of services to members and an undue delay in the resumption of services in the event of a disaster or other significant business interruption.

5.19 Disaster recovery plan - The overall purpose of a disaster recovery plan is to provide for an orderly and timely restoration of services in the event of an unexpected interruption through the failure of one or more key infrastructure components. All systems need a disaster recovery plan. The complexity of the plan will be affected by the complexity of the computer system, the ease of obtaining replacement equipment, the relationship of the system to external users and the relationship of the system to the government's total infrastructure.

5.20 The infrastructure for the Penfax system is maintained by the Resources Corporate Services Unit(CSU). While the CSU would provide the staff and technical expertise for replacing or repairing damaged infrastructure, the PSG, as manager of key aspects of the administration of the pension funds, is ultimately responsible for the continued operation of the system. As such, the PSG should prepare a disaster recovery plan including planning and coordination with other government entities and service level agreements specifying the PSG priority for access to CSU staff in the event of a disaster.

Recommendation 5.1

We recommend that the PSG establish and test an appropriate disaster recovery plan for the Penfax system. This should include service level agreements with entities external to the PSG.

5.21 Business continuity plan - As there is a need for a disaster recovery plan, there is also a corresponding need for adequate business continuity plans. These are required to identify acceptable levels of services that need to be provided in case of an interruption of service. One potential cause of the interruption of service may be inability to access computer systems.

5.22 The primary responsibility for business continuity planning for the Penfax system and its functionality is with the PSG. It is the responsibility of the business owners of a service to ensure there are adequate business continuity plans in place, regardless of the cause of the interruption of service. There is a corporate responsibility to recognize the importance of business continuity plans and to ensure they are a priority.

5.23 In other audits we have recommended that government-wide policies be established regarding business continuity plans and we repeat that recommendation here.

Recommendation 5.2

We recommend the establishment of a policy requiring departments to have an appropriate business continuity plan, and that this plan be kept up-to-date. Further, we recommend the establishment of an initiative to undertake the development and implementation of a corporate business continuity planning process.

Recommendation 5.3

We recommend that, in conjunction with the development of a corporate business continuity planning process, the Business Technology Advisory Committee (BTAC) examine the needs for a corporate disaster recovery planning process, as it relates to the provision of information technology services.

Information Technology Resource Management

5.24 For reasons of efficiency and control, the government has concentrated IT services into a number of Corporate Service Units (CSUs). The Resources CSU maintains and operates the servers that run the Penfax system. This transfer of operational responsibility does not change PSG's ultimate responsibility for managing the IT resources necessary for delivering services to members. When operational responsibility for IT is passed to an external entity, best practices indicate that the relationship should be regulated by a service level agreement. With such an agreement both parties are aware of their responsibilities and there is a reduced chance of neglecting some significant activity.

5.25 We noted, in paragraph 5.20 above, the risk that could occur in the event of a significant interruption of services when a service level agreement was not in place. In ordinary operations, risks arising from the lack of a service level agreement could include:

- failure to update operating systems;
- failure to update storage or processing capacity;
- delays in processing application changes;

- disputes concerning payment for necessary system upgrades;
- delays in recognizing systemic error conditions; and
- uncontrolled system changes if change management processes are not included.

5.26 Our audit did not detect any instances of the occurrence of these risks.

Recommendation 5.4

We recommend that PSG management enter into appropriate service level agreements with the Resources CSU.

Information Technology Security

5.27 Access to Penfax is controlled, first by the Department of Finance's network access control system, which limits access to the directory where the Penfax software files reside. Subsequent control is by Penfax's own access control system which restricts access to certain functions depending on the role of the user. We reviewed this access control system and found that, except for the access capabilities of the "Super-Users" discussed in paragraphs 5.31 to 5.32 below, the controls were adequate.

5.28 The network file server on which the Penfax software and database files reside is located in an appropriate location, with good physical security, appropriate fire prevention systems, and appropriate backup power sources.

5.29 The system databases are backed up daily. On a weekly basis, a set of data is stored at a secured off-site location. This backup system is appropriate to allow recovery from minor processing problems. In the event of a major disaster, it should allow recovery once a processing location and hardware are established.

5.30 There are certain deficiencies of policy and practice that should be considered.

- There is no periodic internal review of the Penfax system security by management. A periodic review could identify and mitigate areas of particular risk. Additionally, in the information technology world, threats to computer systems are constantly changing and therefore a periodic review should be a component of standard management procedures.

- The PSG does not have policies regarding security and confidentiality. While all the staff we interviewed were aware of the need for confidentiality, a well-formulated policy would help them deal with issues that arise in any confidential situation. A security policy would clearly assign roles and responsibilities for allowing access and other matters.

- Policies should require PSG staff to sign security and confidentiality agreements. Signing of agreements often focuses employee attention on these matters which improves compliance.

Recommendation 5.5

We recommend that management periodically review security matters surrounding the Penfax system.

Recommendation 5.6

We recommend that the PSG develop security and privacy policies and communicate these to staff. The signing of a security and confidentiality agreement by employees should be an integral component of these policies.

"Super-Users"

5.31 Most computer application systems provide for the granting of powerful user access rights to all aspects of the systems. This is usually referred to as a "Super User" and is intended to facilitate initial setup of a system as well as to act as an emergency user when significant unforeseen circumstances occur. Industry standards and practices strongly suggest that the granting of such powerful access rights be highly controlled. They should only be used for specific instances and in each case with the express permission of senior management. A "Super-User" could accidentally damage data files and could also circumvent most controls built into a system.

5.32 During the course of the audit we determined that there were three staff with "Super-User" access privileges to the Penfax system. Subsequent to raising this matter with management, the number was reduced to two. Management has informed us that the security structure of Penfax requires that these users have these powerful rights. Management is investigating the possibility of a "double sign-off" for some of the tasks required by the users. Additionally, if the designers of Penfax ever revise their security architecture, PSG management will seek a more reasonably restricted set of user rights.

Application Controls

5.33 Application controls are controls that relate to the processing of transactions and data of a specific application. The objectives of application controls are to ensure the completeness, accuracy and authorization of processing. They also ensure that a management trail is maintained. The following are examples of application controls:

- edit checks on data entry fields such as ensuring numeric data is not placed in a text field and vice-versa;
- access controls which would restrict users to using only certain parts of the application;
- change management controls; and
- production of reports of transactions and other activity.

5.34 General conclusion - The results of our audit indicated that controls over completeness, accuracy and authorizations as well as management trails were adequate. There are some areas where improvement should be considered.

Key Controls

5.35 Examples of the more significant key controls are identified below:

- Members are provided with all supporting information for their pension, or other payment.
- When a Client Services Consultant (CSC) works on a file, that work is reviewed and confirmed by a second CSC.
- All cheque requests and requests to set up, or change, a regular pension payment to a member are reviewed and authorized by a manager prior to being disbursed.
- Confirmation of service is requested from a retiring member's employer.
- Penfax contains many automated edits to assist in the accurate entry of data.

5.36 We commend PSG for its procedure manual. While a few procedures are not up-to-date, overall it is a very useful tool providing detailed procedural reference for the CSCs and training to new staff.

5.37 In reviewing members' files we found a number of files with no direct evidence of a second review. Although we have been assured that these reviews actually are occurring there is no requirement for a formal sign-off by the reviewer. Additionally, the nature and extent of the review are not described. The failure to require review sign-off could result in errors in a file or unnecessary work being done.

Recommendation 5.7

We recommend that a sign-off procedure for file reviews be designed and implemented. A check list could be inserted into the member file noting review procedures with sign-off required when the work is completed.

Document Management

5.38 We found that the PSG has problems with its filing system. For example, we noted:

- termination and pension files for 2003 and 2004 had not been scanned into the document imaging system;
- 3 of 9 termination files tested were missing screen shots of Penfax calculations that are required to be filed; and
- in many cases staff had difficulty locating files for our examination.

5.39 This problem is compounded by the fact that the PSG has not established policies under the Provincial STAR/STOR records management policies.

5.40 Part of the original design for Penfax envisioned that all documentation would be stored electronically. A document imaging system was chosen and installed, at a cost of approximately $12,800. However it has not been successful. We have not examined the reasons for this lack of success. We were informed that after the installation of the imaging software, no policies or procedures were developed for its use. Consequently staff were not certain what should be scanned. At present, only information for NSTPF is being scanned and not all documentation is being scanned. In some cases, the filing clerks are two years behind.

5.41 The volume of requests processed by the PSG for information on pensions is considerable. PSG management recognized that a work-flow control system could increase efficiency and improve service to members. The PSG developed the Automated Tracking Log (ATL) system. It has not been successful and is being used only sporadically at present which could result in delays in file completion. The inability to track work could prevent management from identifying bottlenecks in the PSG's procedures. Management of PSG is investigating work-flow control software to determine which software best meets its requirements.

Practice Contrary to Policy

5.42 We found one staff member regularly engaged in a practice contrary to established policy. When asked to estimate future retirement benefits for members, the staff member would process hypothetical adjustments to the live data in a member's account. This allowed him to prepare the required estimates. He would then reverse the adjustments. If the hypothetical data were not correctly removed, live data could be in error. When this practice was brought to the attention of PSG management, action was promptly taken to discontinue the practice.

Data Integrity

5.43 The PSG receives data on plan members from 39 employers for the PSSF and NSTPF plans. This data is stored in Penfax and is used by the system to calculate the pensions, commuted values, estimates, marriage breakdown divisions and other information needed by members. The PSG has been aware for some time that some of this data received from employers is inaccurate. While it appears that

the actual transmittal and reception of the data is accurate, errors are originating in the data prepared by the employers. Due to the complexity of compensation agreements, a certain employer error level may be inevitable. However, PSG management believes that the error level is too high.

5.44 These errors are frequently detected when member requests are processed in Penfax. However, there is always a risk that an error will not be identified and that a pension payment will be incorrect. Additionally, the overhead expenses of the PSG are paid from the income of the pension funds. The extra staff time spent on correcting these errors is being charged to the funds but is caused, in part, by the employers.

5.45 To address this issue, PSG management has undertaken two initiatives. The first was the "Data Clean up Project" which commenced early in 2004. This involved six staff examining the data recorded in Penfax. Reports were generated to identify files with data characteristic of errors. Each file was then examined to determine if the data was in fact erroneous. If so, it was corrected through verification and confirmation with the employers. This project was delayed for several months due to shortage of staff. We have been informed by management that this project has recently been completed.

5.46 The second initiative involves contacting the employers and discussing the causes of the errors. Management indicated to us that several meetings have been held to date with very positive results. As a result of these meetings, a number of common causes of errors were identified and procedures were developed to prevent or remediate these errors in the future.

5.47 In our review of the data transfer procedures, we noted that almost every employer had different procedures for the transfer of data. While the information in the data files has been standardized, items such as the frequency of transfer, names of the files, number of files used to transfer data, procedures for error correction and procedures for adjustments frequently differed.

Recommendation 5.8

We recommend that PSG management continue with its data integrity initiatives and contact with employers to prevent errors from occurring in the pension source data.

Recommendation 5.9

We recommend that data transfer procedures between employers and PSG be standardized, to meet the requirements of the Penfax system, and that employers be accountable for data accuracy.

Penfax Completion Project

5.48 In our December 2004 Report, we commented that PSG management had undertaken several steps, including the following, to address the findings of the independent audit report of March 6, 2004. These steps became known as the "Penfax Completion Project" and included the following:

- A steering committee was reestablished and provided terms of reference that set out the specific roles and responsibilities of the parties involved. This committee has been meeting regularly.
- A project charter was developed and approved by PSG management.
- A full-time project manager was contracted to oversee the project.
- A detailed assessment was performed by the project manager of completed and remaining work.
- Of the 23 deliverables in the original Penfax contract, 19 had been delivered at the start of the completion project. Eight of these 19 required additional work. The completion project identified 14 additional deliverables required to bring the project to a satisfactory conclusion.

5.49 We reviewed the minutes of the steering committee, including the status reports of the project manager. The committee met regularly and its discussions and decisions were well documented. Good planning documentation was prepared.

5.50 A target date of March 31, 2005 was set for completion. We were informed that this target date was achieved and that a project completion report was being drafted by the project manager.

5.51 As the completion report was still in progress, we did not have an opportunity to review the final assessment of the deliverables of the Penfax Completion Project. We were provided with a draft of the project completion report which showed the cost of the completion project to be $378,911.

Penweb

5.52 In 2001, during the development of Penfax, at a time when that project itself was already late and over budget, PSG and the developers of Penfax decided to explore the potential for users to access the Penfax system over the Internet. The project was called Penweb. We note that the present senior management of the PSG were not the managers who made these decisions.

5.53 Planning problems - In our June 2004 Report (see Chapter 3, paragraphs 3.11 to 3.18), commenting on the independent audit report on the Penfax implementation project, we noted serious findings relating to the management and control of the project. Penweb was treated as an extension of Penfax by the developers and subject to the same serious findings. For example, there was inadequate documentation of the decision to implement Penweb. It was treated as a variation of the Penfax project. No documented cost-benefit analysis was available for our review and there was no project plan, project charter or even a statement of an

objective. The Penweb system has been abandoned since it failed to produce a working system.

5.54 Project costs and results - The total expenditures on Penweb are difficult to determine as the development costs were blended with charges for Penfax itself. An estimate of the cost of Penweb has been made by management. The estimate is based on direct expenditures and an estimate of the portion of blended charges that should be appropriately allocated to Penweb. On this basis, the cost of Penweb was approximately $1,000,000. This does not include the cost of the time of PSG staff working, often full time, on the project. The government and the pension funds have received little or no value for the money expended.

5.55 Legal issues - For Penweb, the only document governing the relations between the PSG and the developer was a "Memorandum of Understanding". This document was signed by the Deputy Minister of Finance on behalf of the Minister of Finance, effective April 9, 2002 (approximately five months after the work on Penweb had commenced). It was very favorable for the developer in that the only items intended to be binding in the memo were the payments to be made to the developer and the developer's retention of copyrights to any developed software. It is unclear whether legal review and assessment were completed on the Memorandum of Understanding prior to signing, in order to adequately protect the interests of the pension funds and government.

eMerge Interface

5.56 Project eMerge is the implementation of the SAP Human Resources module. This project included the core government and the regional school boards. The core government system went live in April 2005. The regional school boards are planned to go-live late in 2005. Both the core government and the regional school boards pass employment information to the Penfax system.

5.57 As of late April 2005, not all the interface components between eMerge and Penfax had been tested and signed off. Management of the eMerge Project have advised us that two phases of testing were required:

- pre go-live with test and converted data; and
- post go-live for elements that trace changes over time and require data from the system in production.

5.58 Testing of the pre go-live was completed. However, the post go-live testing remains to be addressed pending the availability of the necessary production data.

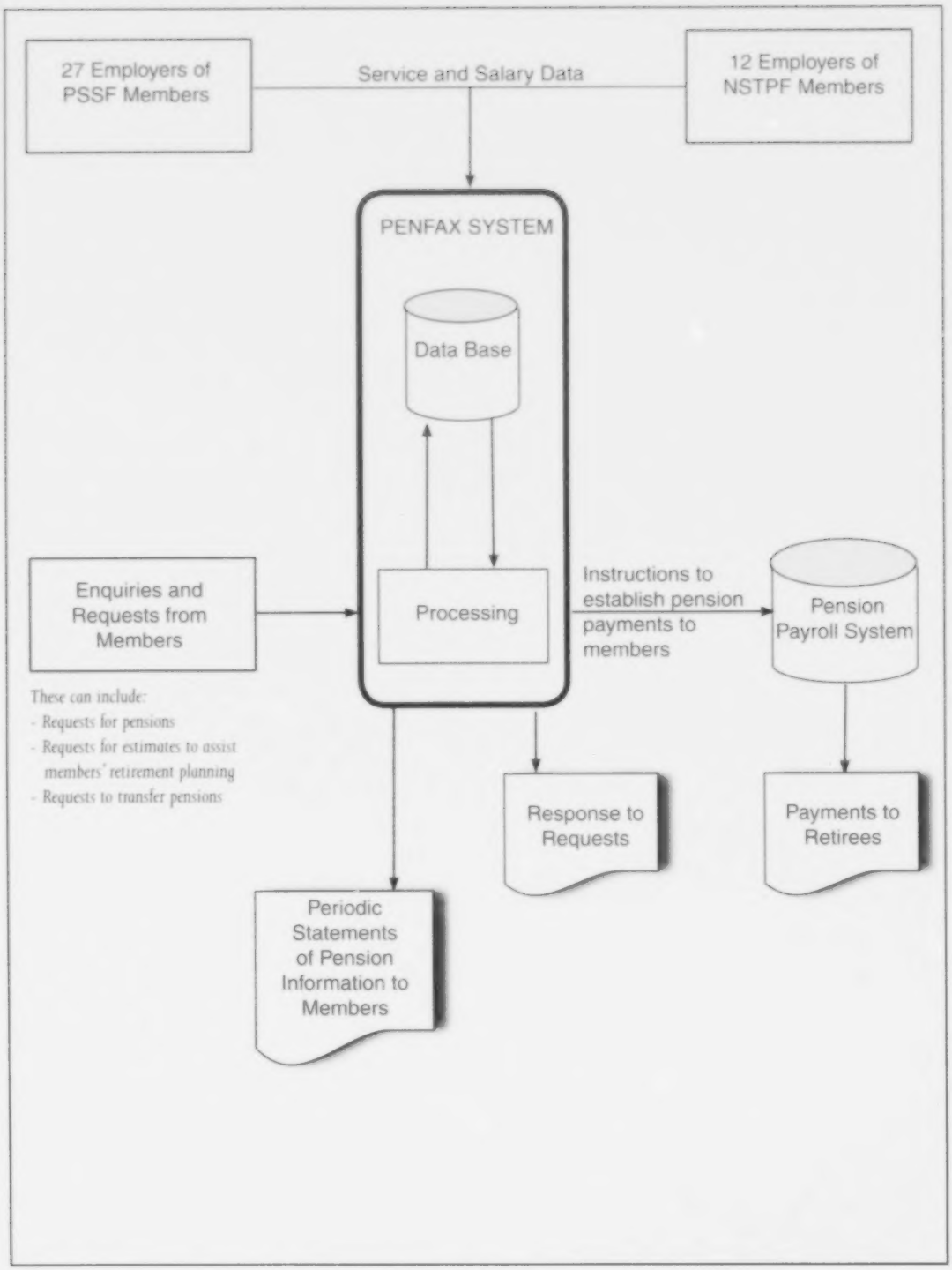
CONCLUDING REMARKS

5.59 We have reported on the Penfax system implementation problems in the past. Although we repeat our concerns expressed in the previous Reports, this Report indicates that the system, as implemented, is functioning in a controlled manner, though improvements should be considered by management.

5.60 Further we note that the expenditures on the Penweb element, approximately $1 million, have achieved little or no benefit.

5.61 There are important lessons to be learned - some of them fairly expensive - by the Department of Finance and government overall from the Penfax implementation. We urge government to ensure that the lessons learned are appropriately documented so that future system implementations can benefit.

Exhibit 5.1 **PENFAX System Overview**


27 Employers of PSSF Members
Service and Salary Data
12 Employers of NSTPF Members
PENFAX SYSTEM
Data Base
Enquiries and Requests from Members
Processing
Instructions to establish pension payments to members
Pension Payroll System
These can include:
- Requests for pensions
- Requests for estimates to assist members' retirement planning
- Requests to transfer pensions
Response to Requests
Payments to Retirees
Periodic Statements of Pension Information to Members

IT Controls - General Computer Environment

Criteria:

- There should be policies and procedures to ensure that systems are appropriately developed, installed and maintained.
- The hardware and system infrastructure should be housed in an appropriate operational environment.
- Systems and information should be secured and protected to prevent unauthorized access or use.
- System software change management procedures should be established to ensure the on-going reliability and integrity of systems.
- There should be policies and practices to ensure that end-user computing is appropriately supported and controlled.
- There should be a formal and detailed disaster recovery plan to support the enterprise's business recovery strategy.
- Management should ensure that business continuity plans are in place to ensure the ongoing continuity of critical business functions.

IT Controls - Computer Applications

Criteria:

- Application controls should be designed to provide assurance that all transactions are completely recorded.
- Application controls should be designed to provide assurance that all transactions are recorded accurately.
- Application controls should be designed to provide assurance that all transactions are properly authorized.
- Application controls should be designed to provide a management trail that enables all transactions to be related back to their origin and the key processes they have been subjected to.

6 NOVA SCOTIA HOSPITAL INFORMATION SYSTEM (NShIS) PROJECT

BACKGROUND

6.1 The overall Nova Scotia hospital Information System (NShIS) project objective as indicated in the Project Initiation document, approved by the steering committee, is "*to achieve an operational Meditech client server system for the province of Nova Scotia interfaced to DHA 9 and the IWK*". The NShIS system is composed of 18 computer software modules (the Meditech system), as listed and described in Exhibit 6.1, to be installed in 34 hospitals. It is a proven product having been successfully implemented in many stand alone hospitals across North America. The key difference between the Nova Scotia implementation and the previous ones is that the NShIS connects all 34 hospitals, which are governed by the 8 District Health Authorities (DHAs) as opposed to a single governing body. The application is operated on a common server.

6.2 The NShIS project was initiated by the government in March 2001. The total project cost is projected to be $55.7 million and the completion date is estimated to be March 31, 2006.

6.3 Provincial and Federal levels of government have been concerned with the adequacy of health information systems for the last decade. The Federal government established the Canada Health Infoway (CHI) initiative with funding of approximately $500 million to improve health information systems across Canada. The NShIS project did not receive funding from CHI.

6.4 Prior to the NShIS project, approximately 70% of Nova Scotia healthcare facilities did not have information systems or support systems in place to fully address the management and patient care challenges faced by the healthcare system. This resulted not only in duplicate testing and patient registration, slow care delivery, and a lack of evidence-based decision making, but also inconsistent forms, procedures, practices and clinical standards within facilities and across the jurisdiction. Further, DHAs could not share clinical information and the Department of Health could not access clinical information efficiently. Not only are hospital professionals and staff intended to benefit from the system, but the physicians working in the Province are expected to benefit as well.

6.5 Exhibit 6.2 reflects the estimated annual volume of activities handled by approximately 6,000 staff in the 34 hospitals in DHAs 1 to 8 across Nova Scotia. Hospitals within DHA 9 (the Capital District Health Authority, CDHA) and the IWK Health Centre are not part of the system being implemented as these facilities use other electronic hospital clinical information systems, but the goal is to provide an interface between NShIS and these entities to achieve interoperability.

6.6 The Nova Scotia hospital Information System will provide health care professionals with quick, accurate, and appropriate access to patients' acute care medical history information, which is important to providing patient care. The Enterprise Electronic Medical Record (EMR) component of the system provides shared access, on an authorized and need to know basis, to providers in the 34 hospitals where the system is being implemented. The NShIS is a foundation component necessary for a Provincial Electronic Health Record (EHR). The EHR, which will include all components of healthcare such as Primary Care, will provide an integrated view of patient information, and will support the sharing of pertinent information among attending care providers within and between Provincial hospitals as well as primary care providers.

6.7 The NShIS system is intended to achieve the following qualitative benefits:

- a common electronic medical record, providing authorized caregivers access to information about services provided to the patient regardless of the facility in which the service was provided;
- access to previously unavailable data and information that will allow managers to have the opportunity to manage resources (note that the financial module is not being implemented and that this benefit refers to interfaces and activity information);
- integration between modules and diagnostic equipment, eliminating duplication of tests and reports; and
- facilitation of support tools such as identification of drug interactions.

6.8 The equipment and Meditech software were acquired from two suppliers which partnered for this and other similar projects. The software supplier provided training in the area of standards and modules as well as maintaining on-site support staff during implementation. An external project manager, business process analyst and technical information architects were contracted to form part of the complement of the project management office. The project team was comprised of staff from DHAs, the Department of Health (DOH) and the external project manager. The project structure also included sponsors, a steering committee and an advisory committee, see Exhibit 6.5

6.9 The 2002 Report of the Auditor General (page 155) included the results of our review of the status of the NShIS project at that time.

RESULTS IN BRIEF

6.10 The following are the principal observations from our review.

- The level of assurance provided on the findings and conclusions in this chapter is less than for an audit (i.e., a review provides moderate assurance

while an audit provides high assurance). This is because of the type of work we performed. Our evidence was based on management representations and review of applicable documentation. We did not test controls in place at the various sites visited.

- DHA management and users have expressed high levels of satisfaction with the system and its benefits.

- In March 2001, the Department of Finance informed DOH of the opportunity to use newly available capital funds "*so long as we can purchase and receive product by the end of this fiscal year*", three weeks away. Four days later, the Business Technology Advisory Committee (BTAC) and the Department began negotiations to acquire the hospital clinical information system pursuant to a request for proposals (RFP) process concluded in late 1999. On March 30, 2001 the Deputy Minister signed the supplier purchase agreement, amounting to approximately $20 million for hardware and software. We are concerned that this very tight timeframe may have impacted the decision to proceed with the results of the 1999 Request for Proposals rather than enter into a new RFP. We understand that the results of the 1999 RFP had undergone an extensive review process and that DOH wanted to move forward with a system that already had the support of the DHAs.

- We examined the project management methodology used by the project manager and compared it to the Project Management Institute's *A Guide to the Project Management Body of Knowledge* (PMBOK Guide, 2000 Edition). The project management methodology was consistent with the PMBOK. Although not all documentation was in the exact form suggested by the PMBOK, the methodology applied addressed key PMBOK areas.

- The development of Province-wide practice standards was necessary for the project to succeed. This was a significant task as the result needed to be that all functional units within hospitals in the Province would capture the same data and document patient-related activities in a consistent and comparable way. The standards changes played a major role in the problems which surfaced at the first patient care system module implementation (DHA 7 regional hospital). Lessons learned from that experience have been incorporated in the remaining implementation plans and activities.

- There have been reductions in the scope of the project due mainly to issues which were not anticipated in the planning phase. For example, the Patient Care System (PCS module) likely will not be fully implemented by all sites at the conclusion of the project, and there are still issues associated with when physicians will have remote access from their offices. The PCS module has been implemented in 6 of the 34 hospitals. A revised implementation strategy has been developed resulting in extending implementation timing into 2007. Additional funds will be required for related computer equipment. However, the costs of the software and estimated training are included in the NShIS budget.

- Management indicates security and confidentiality of patient information and records, and system backup and recovery have been addressed, but NShIS data center disaster recovery plans should be formalized and tested.

- The ability of the three hospital information systems (IWK, CDHA and NShIS) to communicate and share information formed part of the objective for the NShIS. This issue is now being addressed separately as the approach has broadened to include more health systems than just the NShIS. Partial implementation is planned for the summer of 2005.

REVIEW SCOPE

6.11 The objectives of this assignment were to review and assess the adequacy of:

- project planning practices;
- compliance with the government's procurement policy for purchases related to the NShIS;
- project implementation practices;
- monitoring and control practices;
- change management processes; and
- the processes used to familiarize staff with the new systems and provide training and ongoing support

6.12 We discussed our review plan with Department of Health management in late fall of 2004. We used criteria from recognized sources including the Project Management Institute's *A Guide to the Project Management Body of Knowledge* (PMBOK Guide, 2000 Edition). The Project Management Institute (PMI) is the foremost advocate for the project management profession. This document identifies generally recognized good practices in project management which were developed through a voluntary, consensus-based, standards development process. The practices described in the Guide are applicable to a wide range of projects and there is widespread consensus about their usefulness. The correct application of the skills, tools and techniques identified in the Guide will enhance the chances of success on a project. Other sources of criteria included CMA Canada's *Managing the Human Aspects of Organizational Change*, and Nova Scotia's *Policy on Government Procurement*.

6.13 We conducted our review from January to March 2005. Our review consisted of examination of policies and procedures, review of reports and other documents deemed to be relevant, interviews with a co-sponsor of the project, the project owner, the project managers and project staff. We met with selected management and staff at five hospitals. We did not audit or test controls at the various sites

visited. We conducted teleconference interviews with senior management of three hospitals. We completed detailed testing of expense and procurement transactions.

6.14 During the life of the project, there has been significant turnover in key positions involved with the project including the Deputy Minister, initial project manager, business analyst, chief information officer and chief financial officer. As a result we were not fully able to discuss documents or obtain responses to questions involving former occupants of those positions.

PRINCIPAL FINDINGS

Project History

6.15 The need for a new hospital information system in the Province was first discussed in the mid-1990s. The following are the major steps that led to the initiation of NShIS.

- In the mid-1990s, the government of the day developed but did not implement a provincial Health Information Strategy that envisioned an integrated hospital information system.

- In 1997, the Cape Breton Regional Health Board issued an RFP for a hospital information system. Four other regional boards, with similar system concerns, decided to participate in the evaluation of the proposals received. In all, over 100 senior clinicians and administrative staff participated in evaluating the proposals and ultimately selected a single vendor - Meditech.

- In 1999, an external consulting firm was engaged to complete a business case, system access and data warehouse assessment reports for a Health Care Information System in Nova Scotia. The reports were shared with the DOH Information Management Steering Committee (IMSC).

- In June 1999 the government of the day announced a $30 million investment in health information technology.

- During 2000, the Deputy Minister of Health requested IMSC prepare a strategic document outlining IMSC's vision. The committee described and scored 28 health projects against seven evaluation criteria. The Deputy Minister met with the Business Technology Advisory Committee (BTAC). He noted current systems deficiencies and recommended the following four priorities as well as the possibility of obtaining Federal funding through the newly established CHI Federal initiative:

  - the supplier of choice from the 1999 RFP evaluation, the specific modules of the system and an estimated roll-out of $65 million;
  - Picture Archiving System (PACS);
  - Human Resource (HR) system; and
  - Provincial data warehouse.

- In the fall of 2000 DOH engaged an external consultant through a standing offer to identify implementation strategy options for a Provincial hospital Information System and high-level plans on how to address the infrastructure challenges in the transition to a Provincial system. The consultant provided the final report, *Implementation Strategy Options*, on March 30, 2001.

- On March 8, 2001, the Department of Finance informed DOH of the opportunity to use newly available capital funds "*so long as we can purchase and receive product by the end of this fiscal year*", three weeks away. Four days later BTAC and the Department began negotiations to acquire the "*hospital clinical information system pursuant to an RFP process concluded in late 1999*".

- On March 29, 2001, the Minister of Health informed the Minister of Finance of the project as required by the Provincial Finance Act. On March 30, 2001 the Deputy Minister of Health signed the supplier purchase agreement, amounting to approximately $20 million for hardware and software. The project then moved rapidly to the implementation phase.

6.16 We are concerned that this very tight timeframe may have impacted the decision to proceed with the results of the 1999 Request for Proposals rather than enter into a new RFP. We understand that the results of the 1999 RFP had undergone an extensive review process and that DOH wanted to move forward with a system that already had the support of the DHAs. Alternative procurement forms for acquisition of the system software and hardware were signed by the Deputy Minister on March 30, 2001.

Project Management Methodology

6.17 In July 2001, an external project manager was contracted (see paragraph 6.66 below for discussion of the contract).

6.18 We examined the project management methodology used by the project manager and compared it to the Project Management Institute's *A Guide to the Project Management Body of Knowledge* (PMBOK Guide, 2000 Edition). The following quote from that document provides a description of the status of those standards in the project management profession.

> "*Project management is an emerging profession. The primary purpose of this document is to identify and describe that subset of the PMBOK that is generally accepted. Generally accepted means that the knowledge and practices described are applicable to most projects most of the time, and that there is widespread consensus about their value and usefulness. Generally accepted does not mean that the knowledge and practices described are or should be applied uniformly on all projects; the project management team is always responsible for determining what is appropriate for any given project.*" (page 3)

6.19 We determined that the project management methodology described by the project manager was consistent with the PMBOK. In a few cases, the level of detail

included in the documentation was less than the PMBOK suggested. Although not all documentation was in the exact form suggested by the PMBOK, the methodology applied addressed the following key PMBOK areas:

- integration management;
- scope management;
- time management;
- cost management;
- quality management;
- human resource management;
- risk management;
- procurement management;
- change management; and
- communications management.

6.20 The software vendor provided information on implementation requirements for the system. Detailed project plans were documented and tracked by the project management office. The tool used for that process was a widely-used project management software package. It included detailed work breakdown schedules and timelines for each implementation. Progress towards achievement was monitored.

Initiation and Planning

6.21 In September 2001, the project manager completed the Project Initiation document which was consistent with the request for proposals and the proposal which was accepted. This document includes additional information such as the project goals and objectives; project scope, approach and deliverables; project timelines; project organizational structure including defined roles and responsibilities for individuals, teams and committees; ten phases with identified deliverables and creation of master work plan sequences; key assumptions; risks including assessment and mitigation; and critical success factors.

6.22 A number of qualitative benefits were identified in the *The Business Case of a Health Care Information System in Nova Scotia* completed in early 1999. Further, the project was undertaken to provide part of the basic infrastructure required to develop an electronic health record for all Nova Scotians.

6.23 The original project schedule identifies four major sections to the implementation:

- development of the standards - August 2001 - February 2002
- implementation in DHA 7 & 8 - January 2002 - December 2002
- implementation in DHA 4-6 - January 2003 - December 2003
- implementation in DHA 1-3 - January 2004 - December 2004

Change Management

6.24 The size and scope of change brought on by this project was immense. Change management deals with moving from the current processes being followed in completing daily activities to the new practices to be followed. Thorough understanding of the new processes is a critical step to achieving the project objectives. This process also included the development of Province-wide standards to be followed.

6.25 Standards - The development of Province-wide practice standards was necessary for the project to succeed. This was a significant task as the requirement was that all functional units within hospitals would follow consistent and comparable procedures and processes, capturing the same data and documenting patient-related activities in a consistent way. The computerized side of the process included development of standards dictionaries or tables of information used by the system for each of the module applications. There are over 300 dictionaries and 20,000 lines of procedures required to accomplish the standardization. As well the system is interfaced with over 180 different types of diagnostic equipment.

6.26 Standards implementation teams were developed and staffed by approximately eight to twelve persons per DHA. In all, 80 representatives from the various clinical disciplines at DHAs participated. The standards process commenced in November 2001 versus the August 2001 planned start date. Development of the standards and the change management processes required more time than the originally planned six months and expanded to slightly less than one year. With this situation, the project was delayed from the planned schedule by approximately one year.

6.27 The standards changes played a major role in the problems which surfaced at the DHA 7 regional hospital patient care system implementation (see paragraph 6.46 below). The challenges associated with change management were underestimated in the planning phase but more thoroughly dealt with in conjunction with the first implementation. Lessons learned from the DHA 7 implementations (PCS and other modules) were carried forward to the remaining implementations.

6.28 Training - It is estimated that approximately one half of the 6,000 person workforce at DHAs 1 to 8 are not fully literate in basic computer skills. Training plans include requirements for basic computer skills training, advanced training at site on the modules, train the trainer, user acceptance testing and training of end users.

6.29 Training schedules, locations for training, lists of staff requiring training, and class lists were developed and attendance at training sessions was tracked. Training facilities were constructed where required. Training manuals were developed for each module, and improved as more implementation experience was gained. Training evaluations were completed following the training sessions. More in-depth training was provided to key users for the various modules as a way of enhancing the on-site support at the various facilities.

6.30 We discussed the adequacy of training materials, manuals, techniques and facilities with the management of the various DHAs and sites visited. All indicated satisfaction with the training provided.

6.31 Impact on patient care - Minimization of disruption of patient care during the implementation process was recognized as a deliverable in the Project Initiation document. The Patient Care Continuity Plan was developed and discussed with management at each implementation.

Project Implementation

6.32 Schedule - The original implementation time frame of three years was based on information provided by the supplier and validated by an external source. The Nova Scotia experience was the first jurisdiction-wide multi-hospital implementation where separate governing bodies (i.e., multiple DHAs) were involved. The Initiation document identified this as a significant risk that could impact duration and costs of implementation. Mitigating strategies employed by the project manager included drawing on supplier experiences, collaboration with the DHAs' senior managers, drawing on experience of other senior health officials and human resource representatives.

6.33 Implementation schedules and detailed work breakdown and site plans are maintained for implementation of the various modules at the 34 hospitals, see Exhibit 6.6 for the current schedule. In summary, the system is currently functional in 26 of the 34 hospitals. The current schedule indicates completion in March of 2006 for the majority of modules. Certain modules are now delayed; see paragraphs 6.39 to 6.43 which describe the impact of scope changes on the schedule. Also see paragraph 6.26 which describes the delay because of difficulty in achieving consistent practice standards.

6.34 Originally the project plan called for DHA 8 to be the first site to go live. This was changed to DHA 7 because it was less complex and of smaller scale. Due to concerns including preparedness, training, conversion of data, and the Master Patient Index, the original November 2002 implementation date was moved to February 2003. This resulted in an additional four month delay. With the one year delay discussed in paragraph 6.26, the project was then cumulatively 16 months off schedule.

6.35 Satisfaction - Implementation of the majority of the modules has been smoother at successive sites. A post-implementation review was completed at DHA 7 by an external consulting firm in spring 2004. The overall findings were favorable. The consultants state in their overall findings that "*from an operational perspective, overall, the Meditech implementation was a success at GASHA* [DHA 7]".

6.36 At DHA 8, the senior management team interviewed each departmental director to assess benefits and issues with the system and issued a report. Exhibit 6.7 includes a sample of the advantages and disadvantages included in the report. In addition, a post-implementation review of the new billing and accounts receivable system has been completed by an external auditor with satisfactory results.

6.37 We discussed the level of satisfaction with operational management and also enquired as to whether the modules offered any improvement in the effort and results of daily work. Management responded affirmatively to both these questions.

Project Scope Changes

6.38 The scope of the project was specific. The plan assigned roles and responsibilities to approve and manage scope changes.

6.39 No major scope expansions occurred. Addition of the material management module was required to allow the Pharmacy module to maintain pharmacy inventories within the system.

6.40 Scope reductions, approved by the steering committee, occurred because of issues which were not anticipated in the planning phase. The Physician Advisory committee cancelled the implementation of the Provider Order Entry (POE) module after deciding that the module as it existed did not satisfy their requirements. The software supplier has since developed a new software program and at this time it is considered outside the scope of this project. This module is very important as it includes information for physicians on patient medication documentation and trending of important activities such as insulin / blood glucose trending (this information is available to other hospital staff).

6.41 In addition, the Initiation document established a Remote Access Team working committee. This team was responsible for dealing with the remote access to the system from physicians' offices. This access has been delayed due to concerns related to privacy and access from within a physician's private office. The Steering Committee is dealing with alternatives. Final decisions and implementation are planned to start in the summer of 2005.

6.42 The Laboratory Bloodbank module is on hold until new Federal and provincial standards are incorporated into the module. Implementation is expected to occur by March 2006. DHA 7 requested a delay in implementing the Laboratory Microbiology module. The module was ready to go live March 2005 when DHA 7 decided to request a change in the laboratory standards, delaying implementation again.

6.43 Another scope reduction is related to the Patient Care System module (PCS) which is discussed in more detail below.

Patient Care System (PCS) module

6.44 The PCS module focuses on care planning and documentation for care providers. It involves a dramatic change in nursing practice. PCS forces a different way of working than that previously followed at the local unit level within a DHA site. It is a transition not just to technology but to a new process and terminology. The implementation of PCS became the most difficult aspect of NShIS implementation.

6.45 Many different care providers use this module; nursing, occupational therapy, physiotherapy, respiratory therapy, and clinical dietary staff. It impacts the largest single component of the hospital work force. One of the key benefits of the PCS is the standardization of patient assessments and care plans, a critical benefit to patients, and the ability to share this information, traditionally included in the patient chart, with other facilities providing services to the patient.

6.46 The DHA 7 rural areas had implemented the patient care system in May 2003, with minor difficulties that were overcome. However, difficulties were experienced when implementing the PCS module at the regional hospital. While a higher level of acuity is a contributing factor, it appears that resistance to change may have also played a part. In addition, clearer definition of ownership and responsibility between the DHA and the project team would have improved this situation. The difficulties at the DHA 7 regional hospital were discussed publicly including at the House of Assembly.

6.47 Our site visit to DHA 8 at the end of the first day of implementation of the PCS module indicated a much smoother implementation. No difficulties were reported.

6.48 As a result of the experience at DHA 7, a separate patient care system project plan and team were developed. Lessons learned and key activities for each DHA/phase were documented for future implementations of the patient care system and all other modules.

6.49 To be successful, PCS requires specialized technology (wireless laptops with carts) to support documenting at the bedside. Funding requests for this technology have not been successful and as a result PCS has had limited implementation to date (GASHA and North Sydney). Additional funding and time will be required to bring this module to all 34 facilities within scope. The Project Office is working with key stakeholders to develop an implementation strategy with projected costs and timeline to complete PCS. This strategy is anticipated to be complete in June 2005.

6.50 Technology requirements - The March 2001 *Implementation Strategy Options* included technology profiles of the various hospitals. Early in 2002, the Technology plan detailed requirements for technology inventories at the sites, identification of additional requirements, lab instrument interfaces and specific configurations. In some cases, facility renovations are required both for technology and process changes by the DHA. In the case of DHAs 4 to 6, completion of the renovations is causing changes in the implementation schedule.

6.51 Point-of-care portable units had been identified in the standards development phase as a desired technological improvement for the PCS module. These units, piloted at the DHA 7 sites, allow documentation and other system interaction to occur as close to the delivery of care as possible. Similar devices were funded and deployed by DHA 8 for PCS because project funding was not provided. Requests for capital funding of approximately $1.4 million were rejected by the responsible

committee at the Department of Finance as the individual units do not meet the necessary Provincial threshold for capital assets. The project owner is now reviewing the supply market for types, costs and availability of other point-of-care units.

Project Costs and Budgeting

6.52 A Budget and Planning Coordinator (employed by the external project manager) was hired in the spring of 2002 and a Financial Working Group with defined terms of reference was established in the fall of 2002. The Financial Working Group reviews expenditure reports, cash flow forecasts and procurement activities and reports to the Project Owner. The Steering Committee receives summary updates.

6.53 The *Implementation Strategy Options* dated March 30, 2001 includes the initial budget of $41 million, consisting of both internal and external costs. On April 19, 2001, the Minister announced "*a $30 million investment over three years in a critical component of Nova Scotia's comprehensive health information management strategy, which includes electronic patient records.*" As the project progressed, the initial budget was increased, mainly in the implementation and training areas. The risk analysis had identified this possibility, as the jurisdiction wide multi-hospital implementation was a first in North America. Due to the extension of the project schedule, the contracted project management costs also increased. A number of smaller items not detailed in the original plan have arisen, individually under $1million. The current budget of $55.7 million, see Exhibit 6.8, was established in the fall of 2002 and has remained unchanged. This budget is time-phased annually over the life of the project. While there are movements within the budget categories, the projection to completion of the project remains at $55.7 million. The budget is reviewed regularly through the project governance process.

6.54 Adequate funding was identified as a critical success factor in the Initiation document. The time-phased budget provides the linkage to enable DOH financial management to ensure and coordinate project funding over the life of the project. The 2003-04 project funding budget was $3.6 million less than requested, resulting in a lengthening of the overall schedule. During 2003-2004 the project funding was further reduced. Project management noted that availability of staff was a difficulty and the project schedule did not suffer as a result of the second reduction.

6.55 The *Implementation Strategy Options* indicated costs for backfilling staff positions at the DHAs, for those involved in standards and implementation teams, would be reimbursed at 100%. Discussions among the Council of CEOs, the project sponsors and DOH management concluded that standards and implementation team costs would be reimbursed at 100% of the incremental costs while training costs would be reimbursed at 50%. The number of training days, based on experience provided by the supplier, forms the basis of the training budget and training schedules. We tested a number of claims submitted by the DHAs and found the rates were being complied with. However, the timing of claims submissions was to be quarterly, and this requirement was not complied

with consistently. There were delays exceeding 12 months in filing of claims. Management acknowledges the process to be cumbersome as it is too detailed. We concur that changes should be made to eliminate the detail and streamline the process.

6.56 The project budget does not include all costs, for example 50% of the training costs referred to above. As well, it does not include:

- the cost of the space occupied by the project management office within DOH leased premises;
- the point-of-care units; and
- the cost of the new physician Provider Order Entry Module (see paragraph 6.40).

Project Controlling

6.57 External consultants recognized project governance as an area to be defined in the planning stages, including project organization structure, roles and responsibilities and terms of reference for individuals, committees and teams. Processes have been established for:

- reporting formats, routing and frequencies;
- meeting schedules, status reports, communications and updates to the various stakeholders;
- Advisory Committee and Steering Committee minutes;
- circulation and discussion of regular project status reports; and
- circulation and discussion of regular project manager reports.

6.58 All of the above focus on the topics of scope, timeline, budget, risks and issues management.

6.59 The project manager performs regular status reviews and monitors issues and risks with the following groups:

- project management staff;
- various implementation teams;
- senior-management teams of the active DHAs; and
- managers/directors of the affected areas within the DHAs.

6.60 Communications via the internet site established for the project also include reports on the status of the project. BTAC requested and received regular updates on the project commencing October 2001.

6.61 As part of the control and monitoring, discussions and presentations occurred. However, signed approvals and formal sign offs were not well documented throughout the project. For example, under the BTAC terms of reference section on assigned responsibilities, BTAC is responsible for approving major and non-compliant information technology projects and initiatives. However, at the outset,

BTAC did not provide formal approval, although as indicated in paragraph 6.15, BTAC members were aware of the project, participated in the procurement of the system and received regular updates.

6.62 Formal sign-offs are also not documented in other areas although management has indicated that the reviews and approvals take place but are not formally documented. For example, the following are not formally signed off:

- pre-and post-implementation acceptance;
- meeting minutes; and
- detailed project budgets.

Procurement

6.63 We found that procurement transactions were in compliance with Provincial Procurement Policies and the project procurement policy guideline.

6.64 We tested the more significant project procurements for compliance with Provincial Procurement Policy requirements. A project procurement policy guideline had been issued to deal with travel, accommodations, overtime, and facility renovations and how these various items would be processed. We tested claims submitted by the DHAs for backfill, training, travel, accommodations, overtime, and facility renovations and found compliance with the policy.

6.66 In June 2001, DOH issued an RFP for a project manager to implement an effective methodology to manage the project. Following a competitive bid process, an externally contracted project manager was engaged in July 2001 and the project management staffing commenced. The consultant selected submitted the lowest cost proposal. The initial contract of $1 million was extended twice for an additional total of two years due to the extended project schedule. This extension resulted in an increase in the vendor's project management contract of $1.6 million. A lack of availability of administrative staff within DOH resulted in the project manager having to contract administrative staff. While this resulted in a $1.9 million increase in payments to the project manager, these were included in planned project costs. The total project management contract cost was $4.5 million.

Security and Privacy of Patient Information

6.67 As indicated in paragraph 6.13 above, we did not perform any assurance work in this area but relied on management representations and review of selected documents.

6.68 The Privacy Policy working committee established policy and legal requirements with regards to access to patient information. Access to the patient record is controlled by an authorization access matrix which restricts users, modules and locations and is controlled by the system. Some access is limited to receiving reports while other access is live. Access to the system at the DHA level has certain protocols including passwords and user identification.

6.69 Remote access from the physicians' office has been delayed due to concerns over privacy and access from within a physician's private office. Once inside the hospital, physicians with privileges are able to access patient records using the security protocols mentioned above.

6.70 A central data centre maintains all of the application software programs and all patient records. The DHAs are provided local copies of the Master Patient Index (demographic information on patients). At the time of a hospital visit, the secure N.S. Health Intranet retrieves and transmits the patient record.

6.71 Data storage is measured in trillions of bytes of information. The central data site has backup power facilities, fire control systems and proper housing facilities for the 63 servers used by the system. Access to the center is limited to authorized persons. Regular offsite backup occurs.

6.72 The current point-of-care wireless units are laptop computers configured with wireless transmission capabilities to enable patient care data to be transmitted from the patient bed-side. Regular sign-in and password protocols are required with these units. The system validates the identity of the unit, its location and operator. No patient data is retained on the hard drive. The patient care provider obtains the patient record, updates it at bed-side and re-transmits it through the secure intranet to the central data center using encryption codes. Management advises that testing of the wireless signal outside the buildings has indicated very minimal availability. The use of encrypted code mitigates this risk.

6.73 The NShIS Privacy and Security policy requires that random auditing be conducted on access to the NShIS system. The main goal of the audit is to identify unauthorized, unusual or unnecessary access of the system. A team comprised of representatives from each District has developed a process for generating and reviewing random audits. The team members, appointed by the District Chief Executive Officers, generate the audits for each District Health Authority on a monthly basis. The District reports to the NShIS Project Privacy Team indicating that the logs have been reviewed and provides the general results of the review.

6.74 A threat risk assessment to the network and software application was completed by DHA 9 (Capital District Health Authority) information technology staff. Recommendations included improved computer virus protection for individual work stations and documentation of changes likely to impact on the computer environment. These recommendations were addressed.

6.75 The Department of Health indicated that it has established a mutual backup capability with the Capital District Health Authority. Data stored on the DOH data centre storage devices is backed up to the CDHA's data centre storage devices and vice versa. The technology used mirrors every transaction between the two sites. The two sites are connected to each other via high speed fibre optic cable. The system is further backed-up on an incremental basis to digital tape for off-site storage. Processes have been put in place to ensure continued hospital operation when a "System Down" situation occurs.

6.76 DOH has no formalized plan for NShIS disaster recovery. The unofficial plan is to operate the system from the backup location at DHA 9 and then acquire the new hardware necessary to reestablish the system, which is estimated to take two weeks.

Recommendation 6.1

We recommend the disaster recovery plans and procedures be formalized and tested.

6.77 The Department indicated that a project is currently underway to formalize procedures, including system recovery plans to address business continuity requirements. The plan will include the utilization of current production servers that are being replaced to establish a business continuity environment. The Department indicated that appropriate fail-over testing will be conducted without disrupting the ongoing operation of the system. The Department anticipates plans to be in place by late fall 2005.

Interoperability with other Clinical Systems

6.78 Within Nova Scotia there are three clinical information systems. The NShIS system will be operational in DHAs 1 to 8. The IWK has a functionally similar, but different version, of the information system modules. The CDHA (DHA 9) does not have a single information system but has selected *best of a breed of products* for each functional area in its sites and integrated those. In order for the objective of a Province-wide information system to be achieved, all of these systems need to be able to share patient information. The overall NShIS project objective is "*to achieve an operational Meditech client server system for the province of Nova Scotia interfaced to DHA 9 and the IWK*". The ability of these systems to communicate was identified in the plans as a risk. A working committee, the CDHA and IWK Interface team, began early in the project to address this risk. The Department of Health and CDHA engaged external consultants to suggest alternate approaches that could be followed to enable better alignment with the NShIS.

6.79 Application has been made to CHI for funding support to develop more detailed plans to implement interoperability. The application is not just for NShIS but for many other Provincial programs, such as primary health care, long term care, home care, emergency health services, acute care, public health, specialty health and community pharmacy.

6.80 One way communication is planned to be implemented in 2005 for results reporting modules. Phase two will extend interoperability to remaining clinical systems and provide two-way flow of information. The planning phase is to commence in the spring of 2006.

Ongoing Support

6.81 Operational support - Following implementation, the support teams remain on site for a week or more to assist in the transition. A Provincial Help Desk, was implemented early in the project life cycle, under the direction of the operations manager. Service-level agreements and operational service agreements have been completed. Help desk service operates 24 hours a day, 7 days a week through a 1-800 telephone number. Incoming calls are tracked for prompt response. Weekly statistics on volume of calls and response times are reviewed. The response time statistics are operational only for DHA 7 at this time. The operations manager discusses issues and unresolved issues with the DHA information technology directors.

6.82 Districts 1 to 3 and 4 to 6 rely on the Provincial Help desk. Districts 7 and 8 have a help desk during the week and rely on the Provincial help desk after hours and on the weekends.

6.83 We discussed the adequacy of on-going support with the management of the various DHAs and sites visited. All indicated satisfaction with the on-going support provided at the Provincial and local levels.

6.84 Operational sustainability and support structure organization - Considerable investment has been made in information technology projects by DOH and DHAs. The Department recognizes the need to establish an adequately funded, fully staffed and managed support organization to reduce the risk of failure of these systems. An external consultant has been engaged for development of an operational support structure for the NShIS and other health initiatives. There are different organizational models that could be followed. We support and encourage the Department to conclude on the operational sustainability and support structure for the NShIS and other health IT initiatives.

CONCLUDING REMARKS

6.85 The NShIS project has many benefits, both medical and financial. Before the benefits can be achieved, 6000 professional and other staff will change and standardize the way their daily activities are completed and 3000 nurses will change and standardize nursing practices. Physicians will also benefit from the system.

6.86 With the majority of the system implemented, benefits have already been informally identified by management, such as:

- improved standards of practice;
- drug interaction checking;
- reductions in cost, fewer repeat tests, reduced length of stay;
- less duplication in registration and information gathering; and
- availability of previously unavailable information.

6.87 The duration of implementation will exceed the planned schedule. As pointed out by external parties, the implementation schedule was aggressive. The Nova Scotia experience was the first jurisdiction-wide, multi-hospital implementation in North America where separate governing bodies (i.e., multiple DHAs) were involved. We concluded that the project management techniques used were consistent with best practices.

6.88 As the number of implementations increases, users repeatedly state their satisfaction with and support of the system and their desire to utilize more of what the system has to offer.

Exhibit 6.1 **NShIS Modules Implemented**

Admissions - This admissions module expedites the registration and admission process for inpatients, outpatients and other patients who arrive in emergency rooms, for surgical day care, observation or those referred to other facilities.

Billings and accounts receivable - This module provides an automated billings and accounts receivable system based upon electronic patient care information.

Case management - This module provides additional abstracting capabilities.

Corporate management - This module facilitates the process of making changes to computer software.

Community wide scheduling - This module provides for the scheduling of all resources (physician, examining room and equipment) for inpatient and outpatient visits including surgical services, outpatient departments, diagnostic and therapeutic departments and any other service provided within the facility.

Data repository - This module allows for the creation of ad-hoc reports and statistical analysis.

Enterprise medical record - The electronic medical record contains information on patient visits conducted in a community or regional hospital across Nova Scotia.

Imaging and therapeutic services - This module expedites the entire exam process, from patient registration to the final test results. Exams can be conducted for diagnostic imaging, cardiology, neurology and pulmonary function testing.

Internet gateway - This module allows access to the computer system via the internet.

Laboratory - The laboratory system consists of four modules – laboratory, microbiology, blood bank and anatomical pathology. This module assists in processing requests, collecting specimens, organizing tests and capturing and reporting test results.

Medical records and abstracting - This module contains a database of the demographic, insurance and clinical visit history information for every patient, including patient charts. Data can be abstracted, stored and summarized to produce in-house reports as well as information for the Canadian Institute for Health Information.

Order entry - This module allows staff of nursing units, clinics and ancillary departments, including laboratory, diagnostic imaging and pharmacy, to enter orders. Test reports and treatment results from diagnostic and therapeutic departments are electronically reported.

Outpatient campus - This module allows for the entry of orders with abridged patient information in offsite locations.

Patient care system - This module allows care providers to electronically view, update and process relevant information components of a patient care plan. Clinically significant data on the patient's progress is captured and is readily accessible.

Pharmacy - This module assists pharmacists in their daily activities such as processing orders and filling prescriptions.

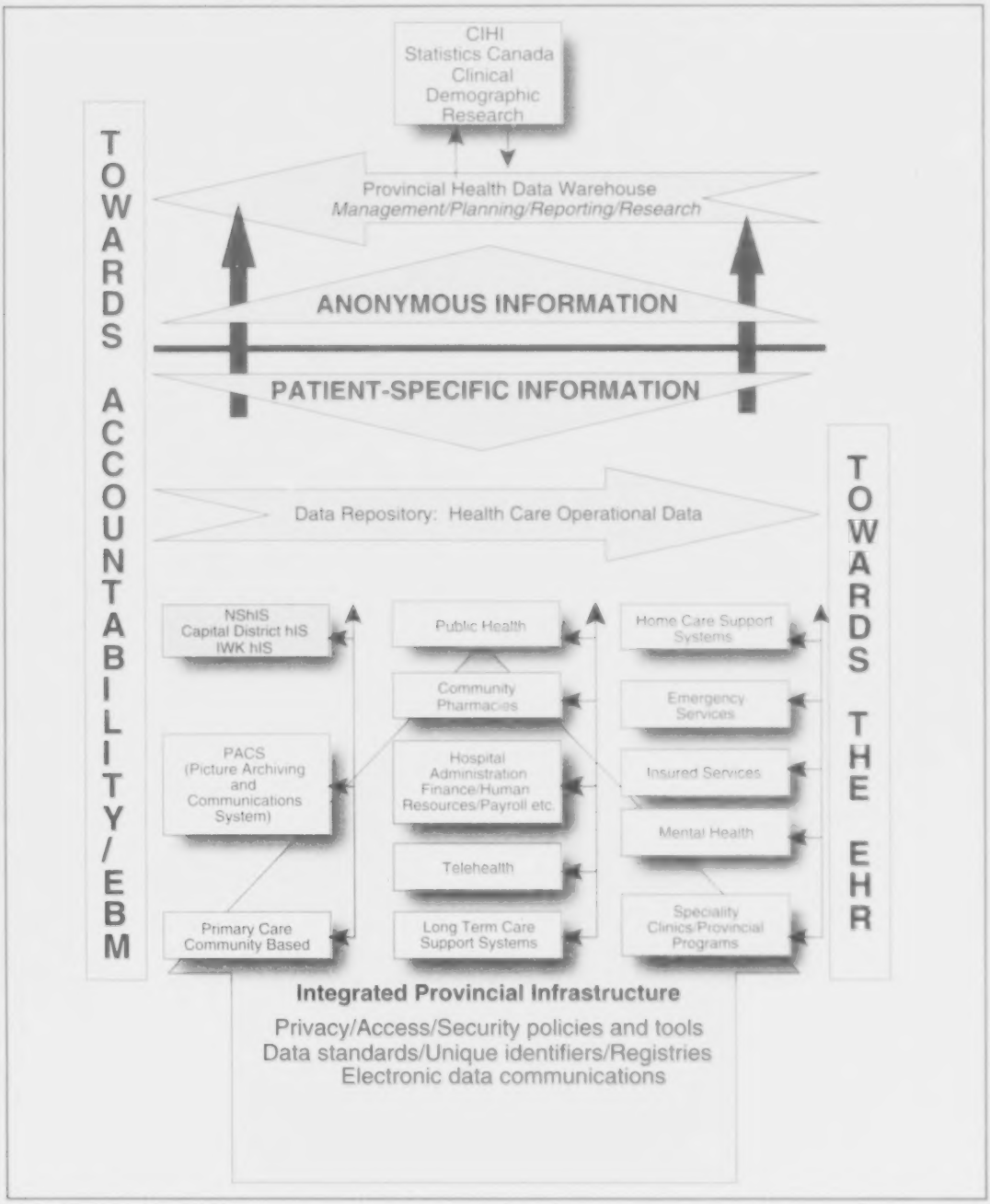
Nova Scotia hospital Information System Statistics

Exhibit 6.2

Hospitals involved		34
Impacted users		6,000+
Number of hospital beds		1,800+
Inpatient admissions		61,000
Outpatient visits		346,000
Emergency room visits		506,000
Diagnostic images		585,000
Laboratory	- specimens	3,000,000
	- orders	5,500,000
	- tests	12,000,000
Microbiology	- specimens	437,000
	- orders	365,000
	- tests	1,000,000
Pathology	- specimens	290,000
	- orders	186,000
	- tests	587,000
Blood	- specimens	89,000
	- orders	100,000
	- tests	339,000

Source: Department of Health
Estimated for the 2000-01 fiscal year.

Exhibit 6.3 Nova Scotia Health Information Framework

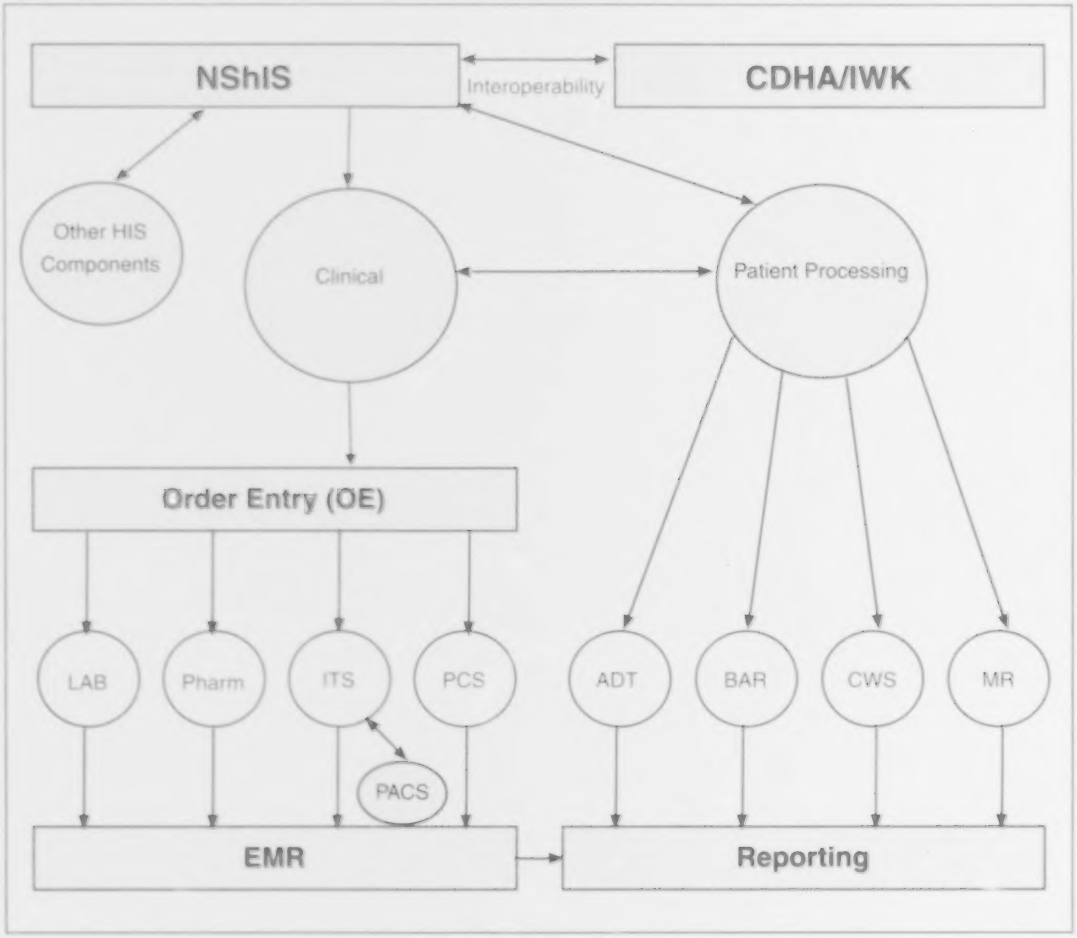


Legend:
EBM - Evidence-based management
EHR - Electronic health record

Source: Department of Health

NShIS Modules and Information Flow

Exhibit 6.4



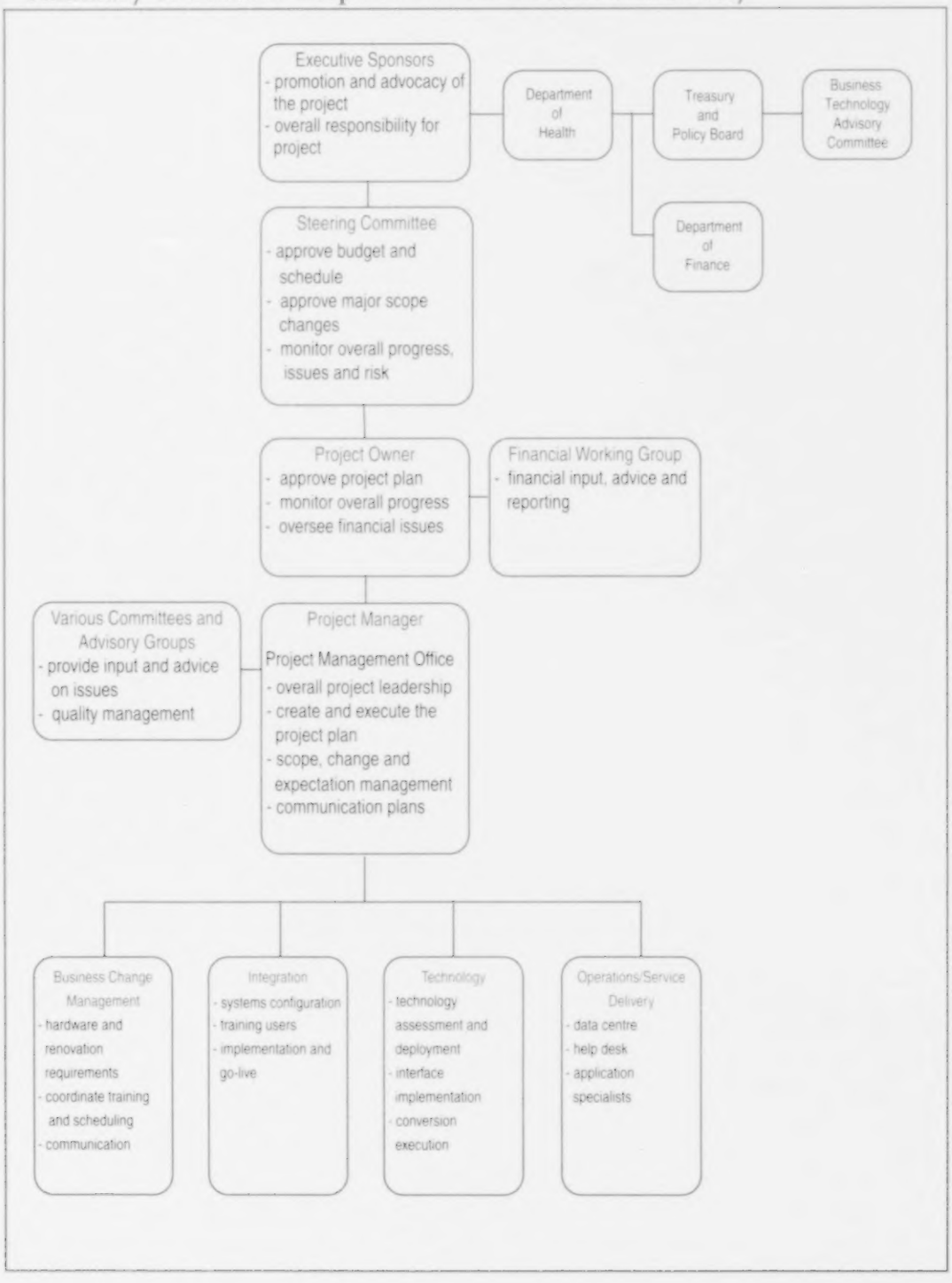
Legend:

ADT - Admissions, discharge and transfer
BAR - Billings and accounts receivable
CWS - Community wide scheduling
EMR - Electronic medical record
ITS - Imaging and therapeutic services
LAB - Laboratory
MR - Medical records
PACS - Picture archiving and communications system
PCS - Patient care system
Pharm - Pharmacy

Source: Department of Health

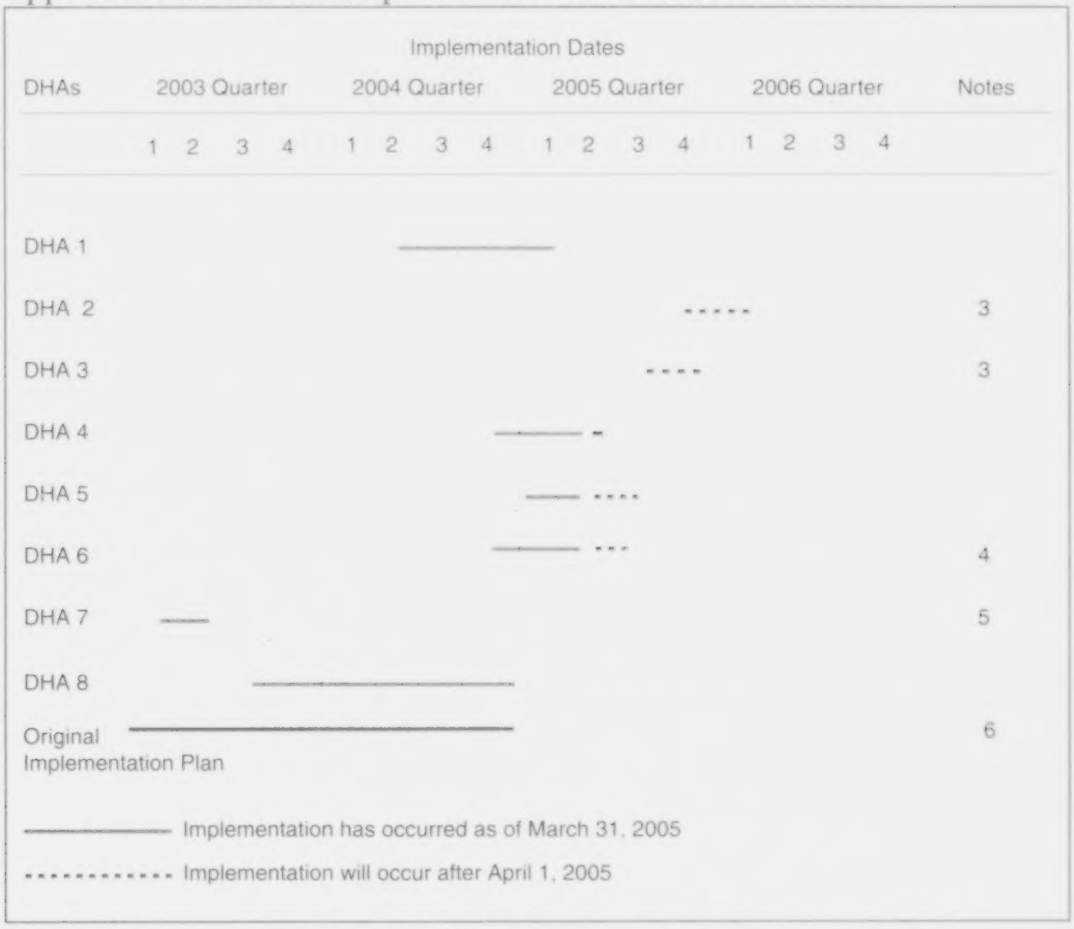
Exhibit 6.5

Nova Scotia hospital Information System
Summary of Current Responsibilities and Accountability



Nova Scotia hospital Information System
Approximate Dates for Implementation of Meditech Modules

Exhibit 6.6



Note 1 - The implementation date for the bloodbank system of the laboratory module has not been determined.

Note 2 - The patient care system was implemented in the community hospitals in DHA 7 in May 2003, and in St. Martha's Regional Hospital in November 2003. This system will be implemented in the community hospitals in DHA 8 during March to December 2005. No implementation date has been established for the Cape Breton Regional Hospital. No implementation date has also been established for DHAs 1 to 6.

Note 3 - The implementation for the community scheduling modules for these two DHAs has not been determined.

Note 4 - The implementation date for the pharmacy module has not been determined.

Note 5 - The implementation date of microbiology system of the laboratory module has not been determined.

Note 6 - The original project schedule showed DHA implementation planned for January 2002 to December 2004.

Exhibit 6.7

Cape Breton District Health Authority
Certain Advantages and Disadvantages of the NShIS

Advantages

Admissions - While the initial registration can be lengthy, subsequent visits are quick to register and demographic data is easily updated.

Patients - There is less repetition of personal information. Computerized patient records allow relevant information to be available where and when it is needed.

Laboratory - Specimens are labeled at their source using bar codes and all processing uses the bar codes. This improves specimen tracking, patient safety and utilization of laboratory resources.

Laboratory - Standardization among all provincial laboratories has made ordering more consistent, comparisons easier and more meaningful.

Pharmacy - Automated drug interaction checking prevents errors and results in better patient care.

Nursing - The use of bar codes for patient identification has resulted in fewer errors, not just transcription errors, with automated data capture.

Physicians - The integrated view of patient data, with quick and easy access to up-to-date patient information results in more timely diagnosis and treatment.

Diagnostic Imaging - Report distribution is greatly improved as the nursing units get their reports immediately after they have been signed.

Management - Ad-hoc reporting can be used to make evidence based decisions and maximize the utilization of resources.

Management - Measures of quality of care and other performance measures are available to help identify opportunities for process improvement and ensure compliance with accreditation standards.

Disadvantages

Clerical workload has significantly increased in some areas.

Sometimes responsiveness of provincial support can be slow.

Source: Cape Breton District Health Authority

Nova Scotia hospital Information System
Summary of Actual and Projected Costs ($ millions)

Exhibit 6.8

Category	Budget*	Actual Cost to March 31, 2005*	Projected Cost to Complete*
External costs			
Meditech software	14.1	14.1	-
EMC^2 hardware	6.1	6.1	-
Interface engine (Data Center)	1.4	0.7	0.7
Interface and conversions	1.4	1.2	0.2
Hardware and software	4.9	3.9	1.0
Project Management Office	4.5	3.7	0.8
Other external resources	1.4	1.0	0.4
Internal costs			
Core implementation team (backfill, travel and meals)	14.8	11.8	3.0
Other process implementation costs	1.0	0.7	0.3
Staff training (note 1)	2.1	1.0	1.1
Other change management costs	2.7	2.3	0.4
Miscellaneous	1.3	1.0	0.3
Total	**55.7**	**47.5**	**8.2**
*Contingency included in various cost categories	1.9	1.3	0.6

Note 1: PCS training costs of $80,000 (7,700 training days) are included in the projected cost to complete.

Source: Department of Health

7 AUDIT OF PERFORMANCE INDICATORS

BACKGROUND

7.1 During the past four years, the First Ministers have entered into three Health Accords. The first was in September 2000. It was followed by February 2003 and September 2004 Accords. (See http://www.hc-sc.gc.ca/english/hca2003/index.html for details of the September 2003 and September 2004 Accords.)

7.2 In the 2002 Report of the Auditor General (chapter 12), we reported the results of our audit of the September 2002 performance indicators report published by the Department of Health under the September 2000 Accord. The Department's *Reporting to Nova Scotians on Comparable Health and Health System Indicators - Technical Report* included 67 indicators in 14 areas which had been approved by the Conference of Deputy Ministers and were reported by all provinces at the same time.

7.3 We were able to give an unqualified opinion on all but 18 of the indicators reported in 2002 by the Department of Health. The 2002 audit was the first time that we were asked to audit a non-financial performance report so it was a significant undertaking for our Office. We worked with legislative auditors through a sub-committee of the Canadian Council of Legislative Auditors (CCOLA) to develop common audit approaches and solutions to common audit issues.

7.4 The 2002 Report was not the first time Nova Scotia reported health system data to the public. However, it was the first cooperative effort between Federal, provincial and territorial governments to report to their own citizens on health system performance using the same set of comparable indicators.

7.5 In 2004, the Department of Health engaged our office to perform an audit of the second health performance indicators report which was released by all jurisdictions on November 30, 2004. The Nova Scotia report, *A Measure of Our Health and Health System*, is available at http://www.gov.ns.ca/health/downloads/measure-health.pdf. Our Auditor's Report is located at http://www.gov.ns.ca/health/downloads/auditorsreport2.pdf.

7.6 As in 2002, the Department of Health worked with its counterparts in other jurisdictions to develop indicators. This was done through sub-committees of the Conference of Deputy Ministers (the Advisory Committee on Governance and Accountability and the Performance Reporting Technical Working Group). The Conference of Deputy Ministers approved 18 featured indicators and an additional optional 52 non-featured indicators for reporting. The government of Nova Scotia decided to report 18 featured indicators and 2 non-featured indicators.

7.7 The Department of Health and its counterparts in other jurisdictions are required to issue reports under the 2003 and 2004 Accords. Detailed plans for issuing

those reports have not yet been developed nationally and there has been no national decision on whether they will be audited.

RESULTS IN BRIEF

7.8 The following are the principal observations from our audit.

- We were able to give an unqualified opinion on the indicators reported by the Department of Health in the November 2004 publication, *A Measure of Our Health and Health System*. We are encouraged by the work undertaken by the Nova Scotia Department of Health in the preparation of that report.

- We were also requested by the Department of Health to undertake additional audit work related to three specific performance measures, not included in *A Measure of Our Health and Health System*, that originate from Provincial systems. We were only able to conclude that systems are adequate to produce data which is complete and accurate for one of the three measures audited. The Department of Health is planning to work with the responsible entities to make improvements to the processes for collecting data for the other two indicators.

AUDIT SCOPE

7.9 The objectives of this audit, for featured indicators in *A Measure of Our Health and Health System*, were to assess whether:

- performance measures (as defined by the Conference of Deputy Ministers - CDM) as reported by Nova Scotia, adequately reflect the facts, to an appropriate level of accuracy;

- the performance measures are defined and their significance and limitations are explained;

- the report states and properly describes departures from what was approved by the Conference of Deputy Ministers, and explains plans for the future resolution of any departures; and

- the performance measures comply with the definitions, technical specifications and standards of presentation approved by the Conference of Deputy Ministers.

7.10 The indicators included in *A Measure of Our Health and Health System* originated from national databases at Statistics Canada, Health Canada and the Canadian Institute for Health Information (CIHI). To avoid duplication of audit effort, legislative auditors relied on a single audit of these national databases. Indicators originating from Statistics Canada and Health Canada were audited by the Office of the Auditor General of Canada. Indicators originating from CIHI were audited by a team of auditors led by the Office of the Auditor General of British Columbia.

7.11 The criteria used in our audit are shown in Exhibit 7.1, Appendix A, page 112.

7.12 Our audit was limited to information related to the most recent year for which each indicator was reported. We did not assess relevance or sufficiency of the indicators selected for reporting. Our work on the Department of Health's analysis and discussion of the health indicators was limited to reading such information to make sure that it was not inconsistent with the result of the audited indicators.

7.13 In addition, we were requested by the Department of Health to undertake additional work related to three specific performance measures, not included in *A Measure of Our Health and Health System*, that originate from Provincial systems. Our objectives were to assess whether the systems that support the production of the following measures are adequate to produce data which is complete and accurate.

- Home care
  - Home care clients, all ages - The number of distinct individuals who have been assessed by continuing care coordinators and determined to require home care services for the week ending…
  - Home care clients, aged 75+ - The number of distinct individuals aged 75+ who have been assessed by continuing care coordinators and determined to require home care services for the week ending …
- Wait times for cardiac bypass surgery
  - Median wait time for cardiac bypass surgery
  - Distribution of wait times for cardiac bypass surgery
- Wait times for radiation therapy

PRINCIPAL FINDINGS

Indicators included in A Measure of Our Health and Health System

7.14 Our opinion on the indicators reported in *A Measure of Our Health and Health System* was unqualified. The full text of our Auditor's Report is included as Exhibit 7.1 on page 111.

Other Indicators from Provincial Systems

7.15 Home care - We were unable to complete our audit of the systems which produce the home care indicators noted in paragraph 7.13 above. The SEAscape system is used to manage the single entry access process for continuing care which includes long-term care, home care and other programs. The system does not have a field which clearly identifies home care clients and, therefore, we could not segregate

home care from other clients to enable completion of the audit. The Department of Health performs a complex series of extractions to identify such clients, but we were unable to duplicate the process and create the same results or to perform alternate audit procedures.

7.16 Wait times for cardiac bypass surgery - We determined that the indicator data reported by the Capital District Health Authority's Division of Heart Health and Emergency - Cardiac Wait Times Database did not meet the definition specified by the Department of Health. The information provided included numerous cardiac procedures such as valve replacements and pacemakers whereas Health had requested information on only cardiac bypass surgery. In addition, we found problems with the methodology used to calculate the wait times. We concluded that, at the time of our audit, the system used to provide wait time information for cardiac bypass surgery was not adequate to produce data which was complete and accurate. The Department of Health subsequently started discussions with the Capital District Health Authority to clarify responsibility for production of the indicator data and specific requirements.

7.17 Wait times for radiation therapy - We concluded that the systems which produce data on wait times for radiation therapy at the Capital District Health Authority's QEII Cancer Care Program are adequate to produce data which is complete and accurate.

7.18 We made recommendations for improvements to controls such as:

- implementation of a requirement to change system passwords periodically;
- offsite storage of weekly and daily backup tapes; and
- retention of Requests for Radiation Services documentation for a longer period of time to ensure adequate management/audit trail is retained.

7.19 Although the data from the system is complete and accurate, it cannot be used to report the related non-featured indicator defined by the Conference of Deputy Ministers. The Nova Scotia system reports wait times by priority classification for treatment (e.g., urgent, emergent), whereas the approved indicator categorizes wait times by site of the cancer. In order to enable future reporting of an indicator that is comparable to other jurisdictions, the system will need to capture the site of the cancer and be able to summarize wait time data on that basis.

CONCLUDING REMARKS

7.20 Over the past several years, much has been said and written by others on the need for better health information and reporting of outcomes. The Province of Nova Scotia has taken some steps to achieve this - see chapter 6 of this Report which describes the Nova Scotia hospital Information System project. Another step is the reporting in *A Measure of Our Health and Health System* and the decision to engage our Office to provide an audit opinion on the report. Our audit provides assurance to the reader on the quality of the included data. The role of audit is well understood

in the provision of financial information, but is just beginning to be recognized in the provision of non-financial information. We commend the Department of Health for its efforts and the leadership shown in publishing this report and having it audited.

7.21 The systems to collect outcome data in some areas need to be strengthened. Our audit work in two areas (Home Care and the Capital District Health Authority's Division of Heart Health and Emergency - Cardiac Wait Times Database) indicated problems with the systems in place to generate performance measures. There are many other Provincial health systems which generate important information for decision making, such as wait times, and the Department of Health needs to ensure that the information generated is reliable and verifiable. There are a number of entities and staff involved in collecting health outcomes data throughout the Province. To ensure a common understanding, it is important that standards for collection and reporting be developed and clearly communicated.

Auditor's Report

Exhibit 7.1

To the Minister of Health and the Members of the Legislative Assembly of Nova Scotia:

I have audited the 20 health indicators presented in Nova Scotia's *A Measure of Our Health and Health System*, dated November 30, 2004, as prepared by the Department of Health. The report is published pursuant to the 2003 First Ministers' Accord on Health care renewal, which builds on the 2000 First Ministers' Meeting Communiqué on Health. The Conference of Deputy Ministers of Health identified and defined 18 featured indicators required for reporting and an additional 52 optional non-featured indicators to be reported to Canadians. Reporting health indicators is the responsibility of the Government of Nova Scotia which has reported 18 featured and 2 non-featured indicators. I note that the technical specifications and any limitations on the quality of the data are not included in *A Measure of Our Health and Health System* but available on the following website which is referenced in the report: www.cihi.ca/comparable-indicators

My responsibility is to express an opinion on the completeness, accuracy and adequacy of disclosure of the 20 health indicators presented in *A Measure of Our Health and Health System*, based on my audit. However, my responsibility does not extend to assessing the performance achieved by the Nova Scotia health care system, nor the relevance or sufficiency of the health indicators selected for reporting. My work on the analysis and discussion of the health indicators presented in this report was limited to reading such information to make sure that it was not inconsistent with the result of the audited indicators. As well, my audit was limited to information related to the most recent year for which each indicator was reported.

I conducted my audit in accordance with the standards for assurance engagements established by the Canadian Institute of Chartered Accountants. Those standards require that I plan and perform an audit to obtain reasonable assurance whether the health indicators presented are free of significant misstatement. To this end, I audited these health indicators to determine whether they meet the criteria of completeness, accuracy and adequate disclosure, as presented in Appendix A of my report. My audit includes examining, on a test basis, evidence supporting the health indicators and disclosures. My audit also includes assessing significant judgments made in *A Measure of Our Health and Health System*, dated November 30, 2004, by management of the Department of Health.

In my opinion, the health indicators included in *A Measure of Our Health and Health System* and the disclosure of limitations and technical specifications on the referenced website www.cihi.ca/comparable-indicators, present fairly, in all significant respects, the required information and it is complete, accurate and adequately disclosed, using the criteria in Appendix A.

My work included auditing the data for the indicator of "hospitalization rate for ambulatory care sensitive conditions." I was unable to form an opinion on this indicator in my 2002 report because the Canadian Institute for Health Information's study on data quality was not completed. This study has now been completed and I am able to form an opinion that, in *A Measure of Our Health and Health System*, this indicator presents fairly, in all significant respects, the information required, using the criteria in Appendix A.

I am encouraged by the work undertaken by the Nova Scotia Department of Health in the preparation of this report.

E. Roy Salmon, FCA
Auditor General

Halifax, Nova Scotia
November 30, 2004

APPENDIX A

Audit criteria

The Department of Health has acknowledged the suitability of the following criteria:

Complete

According to the 2003 First Ministers' Accord on Health Care Renewal, the Conference of Deputy Ministers approved 70 indicators, including a subset of 18 indicators that all jurisdictions are to feature in their 2004 reports. All health indicators reported comply with the definitions, technical specifications and standards of presentation as approved. All 18 featured health indicators are reported.

Accurate

The health indicators reported adequately reflect the facts, to an appropriate and consistent level of accuracy, to enable comparisons to be made between jurisdictions and between the 2002 and 2004 reports within each jurisdiction, where applicable.

Adequate disclosure

The health indicators are defined and the significance and limitations on the quality of the data are explained. The report states and properly describes departures from what was approved by the Conference of Deputy Ministers and explains plans for the future resolution of the departures, where applicable.

8 FLEET MANAGEMENT

BACKGROUND

8.1 The Province of Nova Scotia owns and leases many types of fleet assets, including cars, trucks, excavation equipment and aircraft. As of January 2005, fleet insurance records identify 2,228 units owned and 133 units leased by the Province. Cost information for the entire Provincial fleet is not available.

8.2 The Department of Transportation and Public Works (TPW) and the Department of Natural Resources (DNR) have made significant investments in fleet assets in order to fulfill their mandates. Based on insurance records, these two Departments collectively account for 86% of the Province's owned fleet assets. The majority of TPW fleet assets consist of heavy equipment, whereas the majority of DNR fleet assets consist of light trucks and small equipment. In addition, DNR has helicopters. TPW employs 1,357 units (61% of the Provincial fleet) costing $89.9 million. DNR employs 553 units (25% of the Provincial fleet). The total cost of these assets is not known to DNR. Exhibit 8.1 on page 131 provides additional information on fleet assets at TPW and DNR.

8.3 Each of the two Departments has its own fleet management branch. The branches are responsible for the acquisition, maintenance and disposal of the Department's fleet assets, as well as related matters such as fuel storage and maintenance facilities. Responsibility for the operation of fleet assets belongs to the departmental operating divisions which employ the assets, except for helicopters in DNR which are operated by the Department's fleet branch.

8.4 TPW has 4 district offices, 6 repair and maintenance shops, and 68 depots which it uses to manage, maintain and store fleet equipment and supplies. DNR has 3 district offices, 4 repair and maintenance shops, and 28 fuel depots located throughout the Province. (See Exhibit 8.2 on page 132.) TPW employs 181 staff in its fleet operations. DNR employs 21.

8.5 Operating costs for fleet management at TPW totaled $8.8 million for the year ended March 31, 2005, exclusive of amortization expense. $8.2 million of this amount was allocated to other divisions of the Department based on usage of fleet assets. During the same year, TPW had capital costs of $6 million for the purchase of new fleet assets.

8.6 DNR incurred $2.7 million for fleet management operating costs during the year ended March 31, 2005, exclusive of amortization. Capital costs of $1.8 million were also incurred in that year.

RESULTS IN BRIEF

8.7 The following are our principal observations from this audit.

- Fleet management in the Nova Scotia government is not coordinated across the Provincial fleet. Each government department is responsible for the management of any fleet assets employed. Detailed information on the composition and operation of the entire Provincial fleet is not readily available.

- There is limited coordination of fleet operations between Transportation and Public Works and Natural Resources. We identified opportunities to promote economy, efficiency and control over government fleet operations by improving the level of coordination between the two Departments in areas such as policy development, information systems, acquisitions, disposals and fleet maintenance.

- The management information system in TPW is adequate to provide management with information needed to manage the Department's fleet. We were unable to conclude on the adequacy of the DNR systems due to lack of Department knowledge of systems and absence of related documentation. We noted under-utilization of data gathering, reporting and other capabilities of the management information systems in both TPW and DNR.

- Acquisition of fleet assets at TPW and DNR generally complied with existing legislation, regulations and policies.

- We were unable to obtain sufficient, appropriate audit evidence to conclude on whether there is due regard for economy and efficiency in fleet asset acquisition and disposal practices at the Departments. There is insufficient analysis and documentation to support decisions.

- We were unable to conclude on whether there was due regard for economy and efficiency in the maintenance and operation of fleet assets in TPW and DNR due to deficiencies in fleet management systems, analysis and documentation. We noted incomplete vehicle log books, vehicles without log books, inadequate maintenance schedules and records, incomplete information on distance driven, and incomplete warranty information. We also observed instances where routine maintenance was performed long after it was due according to maintenance schedules.

- In DNR, we identified approximately $45,000 in expenses which were inappropriately charged to fleet operations. We were advised that staff had been instructed to charge these expenses to fleet operations due to availability of unspent budget allocations for the year. Such accounting practices do not provide for accurate financial reporting and are inappropriate.

- We identified instances of non-compliance with the Provincial regulations related to fuel storage and instances of non-compliance with the Provincial procurement policy.

- TPW has completed environmental site assessments on two-thirds of its estimated 80 base locations and identified environmental contamination on almost all of the sites assessed. An action plan to remediate the environmental contamination has not been prepared and the cost of clean-up has not been estimated. DNR has not had its fuel storage locations assessed for environmental contamination.

- Controls over fuel expenses and fuel consumption in TPW and DNR are inadequate to ensure due regard for economy and efficiency. We found that some divisions analyze and monitor fuel expenses, while others do not. The Departments cannot assure that all recorded fuel expenses are incurred for government-related activities, and there are inadequate measures to detect excessive fuel usage due to poor operating and maintenance practices.

AUDIT SCOPE

8.8 In April 2005 we completed a broad scope audit of fleet management operations in the Department of Transportation and Public Works and the Department of Natural Resources. The audit was conducted in accordance with Section 8 of the Auditor General Act and auditing standards established by the Canadian Institute of Chartered Accountants, and included such tests and procedures we considered necessary in the circumstances.

8.9 The objectives of the audit were to assess:

- the adequacy of the information and other systems used to manage fleet assets with due regard for economy and efficiency;

- whether fleet assets are acquired and disposed of in accordance with existing legislation, regulations, policies and/or procedures, and with due regard for economy and efficiency;

- the adequacy of the systems and practices used to safeguard fleet assets and ensure due regard for economy and efficiency in the maintenance and operation of fleet assets; and

- the adequacy of the systems and practices used to manage and maintain fleet fuel supplies to ensure compliance with environmental protection legislation and regulations, and due regard for economy and efficiency.

8.10 The audit examined systems and practices for land-based and aviation fleet operations in the two Departments. It did not examine any matters relating to the Province's ferries and boats.

8.11 Audit criteria were developed to assist in the planning and performance of the audit. The criteria were discussed with and accepted as appropriate by senior management of the Departments.

PRINCIPAL FINDINGS

Fleet Management Systems

8.12 In this section of the audit, we examined the adequacy of the information and other systems used to manage fleet assets and ensure due regard for economy and efficiency. We concluded that there is under-utilization of existing systems, weaknesses in the systems, and an opportunity for better coordination and cooperation between the two Departments.

8.13 Fleet management in the Nova Scotia government is not coordinated across the Provincial fleet. Each government department is responsible for the management of any fleet assets it employs. Detailed information on the entire Provincial fleet is not readily available.

8.14 The Department of Transportation and Public Works (TPW) and Department of Natural Resources (DNR) have different information systems and varying practices to manage their respective fleet assets. We found very little coordination and cooperation between the two Departments on common fleet management issues. There is no bulk purchasing of similar vehicles or shared training. TPW and DNR have maintenance sites located near each other - sometimes on the same street - which may provide opportunities for savings by combining operations. When vehicle repairs are needed and there is no repair facility nearby, a vehicle operator is not required to use the services of a nearby facility of the other Department.

8.15 There are government-wide policies related to fleet operations. TPW has a manual that addresses some fleet management issues, but it is over twenty years old. DNR also has a limited number of fleet management policies. None of these address all significant matters related to fleet management. We were informed that TPW has started to prepare a comprehensive fleet management policy for its own operations.

8.16 We believe inter-departmental coordination and cooperation should be encouraged in the fleet operations of TPW and DNR. There are opportunities to improve the efficiency and economy of the Departments' fleet management practices, including using one computer system, developing one comprehensive fleet management policy, and coordinating maintenance services and vehicle purchasing.

8.17 We noted that DNR has conducted some planning for its fleet operations. TPW management indicated that they will be reviewing their operations in 2005-06. We believe the development of a long-term plan is an important aspect of fleet management, and this is another area where the two Departments could work together.

Recommendation 8.1

We recommend that Transportation and Public Works and Natural Resources investigate ways of coordinating their fleet management operations in order to promote economy and efficiency. In doing so, consideration should be given to including fleet operations of other government departments and agencies.

8.18 Transportation and Public Works systems - TPW uses the plant maintenance module of the government's corporate financial management system as its fleet management system. A fleet management component recently became available for the plant maintenance module, and the Department plans to implement it in 2005-06.

8.19 We concluded that the plant maintenance module is capable of producing useful and timely reports on fleet assets, and thus can provide management with the information needed to manage fleet operations. The system can produce exception reports, schedule preventative maintenance, and report based on kilometres driven and hours of operation. However, these functions are not used by the Department. We believe the Department's information systems could be better utilized to manage fleet assets, including identification of vehicle maintenance needs and excessive fuel usage, and whether government vehicles are used for authorized purposes.

8.20 The Department does calculate an hourly cost for fleet assets. However, the number of hours used in the calculation represents the amount of time an asset is assigned to a project, not the actual time the fleet asset is operating. It is used primarily for allocating fleet asset costs, and is insufficient for managing fleet asset utilization.

8.21 TPW regularly monitors its use of the fleet management information system. Staff has identified needed improvements to the systems' reporting capabilities, as well as information needs which are not currently being met. Management believes many of the needs will be met when the Department implements the fleet management component of the plant maintenance module in 2005-06.

8.22 TPW staff has limited training in proper fleet management practices. We believe formal fleet management training and continuous professional updating is important to ensure the economical and efficient operation of the fleet. Management has also identified training as an area requiring attention.

8.23 Natural Resources systems - DNR's fleet management branch is comprised of a motor vehicle section and an aviation section; each with separate management information systems because of the different information requirements of the two operations.

8.24 We observed under-utilization of the fleet management information systems in DNR. For example, the Department uses its motor vehicle system to record

distance traveled by vehicles, but this information is not used to manage fleet assets. We noted limited use of system fleet reports and a need for additional training on both systems. Due to the lack of staff knowledge of the two systems and the absence of system manuals, we were unable to gain a sufficient understanding of the systems to conclude on their adequacy for managing DNR's fleet assets.

8.25 We did, however, note the following.

- The primary information system for motor vehicles does not produce accurate and timely reports on fleet assets due to data errors and significant delays in posting vehicle activity reports. The Department is taking action to address these deficiencies.

- Monthly reports from vehicle operators are sent to the fleet manager, who manually enters the reports into the motor vehicle fleet management information system. The Department is attempting to computerize this function.

- Fleet assets exceeding government thresholds for recording tangible capital assets are recorded in the government's corporate financial management system. DNR fleet management staff does not have access to this system. The Department's own systems do not have complete historical cost information for each fleet asset.

- Manual records and electronic spreadsheets are used to supplement the primary information systems. We noted instances where the primary systems would be capable of providing the information supplied by other records if appropriate source data was entered.

- Labour and operating costs for the aviation fleet are not tracked by asset. As a result, complete life-cycle costs for aircraft are unknown.

- Because fleet operation computer systems at DNR are not networked, identical data has to be entered separately into multiple computers. Management stated that a project has been initiated to network its computer systems.

- There has been no formal training on the motor vehicle information system, and there has been no training on the aviation information system in the last twenty years. There is a need for additional training on the systems.

- There is also a need for training in general fleet management practices.

Recommendation 8.2

We recommend that the Department of Natural Resources' fleet management branch review and assess its current information needs and evaluate the ability of current systems to meet them. The Department should also assess the need for additional staff training in fleet management systems and practices.

Acquisitions and Disposals

8.26 Acquisitions and disposals are key activities in the management of fleet assets. Our objective was to determine whether or not fleet assets are acquired and disposed of in accordance with existing legislation, regulations and policies, and with due regard for economy and efficiency.

8.27 We examined the acquisition and disposal processes within the Department of Transportation and Public Works (TPW) and in the Department of Natural Resources (DNR). We concluded that there is general compliance with existing legislation, regulations and policies with respect to acquisitions, but there are a few areas for improvement. However, we were unable to obtain sufficient audit evidence to conclude on compliance with respect to disposals, or whether there is due regard for economy and efficiency in acquisition and disposal processes.

8.28 We tested a sample of acquisitions in TPW and DNR for compliance with the Provincial procurement policy and the Provincial policy on acquisition of fleet assets. We found that fleet acquisitions are in compliance with the Provincial procurement policy, but not with the fleet asset acquisition policy. The Provincial policy on vehicle acquisition and leasing, most recently reviewed by government in October 2004, limits the purchase price for fleet vehicles to $25,000, not including Harmonized Sales Tax. We encountered several acquisitions in which this limit was exceeded. Management of both TPW and DNR indicated that this limit is too low for many of the types of fleet assets needed for operations.

Recommendation 8.3

Government should review the policy on acquisition of fleet assets and assess the reasonableness of the $25,000 limit and/or clarify the application of the limit to the different vehicles employed in Provincial fleet operations.

8.29 We reviewed the disposal processes in TPW and DNR. DNR disposes of its surplus fleet assets through the Real Property Services Section of TPW which holds multiple auctions throughout the year. TPW Fleet Management Branch disposes of its surplus fleet assets by way of an annual auction which it administers, rather than through the Real Property Services Section of the Department which disposes of Crown assets throughout government. We could not identify a rationale for separate disposal processes within TPW.

8.30 At TPW, we observed maintenance and repair work performed on vehicles just prior to retirement and disposal. Management indicated this is done to ready the assets for sale and increase disposal proceeds. We agreed that certain procedures, such as removal of specialized equipment from a vehicle prior to sale, are appropriate. However, the Department is unable to substantiate that work prior to sale, such as painting vehicles, increased disposal proceeds by more than the cost of preparing the vehicles. Both Departments have a practice of salvaging usable parts from retired equipment prior to disposal. Net proceeds from the disposal of Crown assets are deposited into the Consolidated Fund of the Province.

8.31 The number of fleet assets acquired in a year by each Department is dependent on the capital budget allocated by government. Acquisition decisions in both TPW and DNR are based primarily on a replacement strategy, in which new fleet assets are purchased to replace existing assets which need to be retired. We found no detailed, documented analysis to support the number and type of fleet assets needed to fulfill the operational requirements of each Department, though DNR has surveyed its fleet operators and found that they believe the size of the fleet is adequate. DNR has performed some analysis of the economy of purchasing rather than leasing vehicles. We saw no evaluation of alternative means of meeting operational requirements such as interdepartmental sharing or paying employees for use of personal vehicles. Management of TPW indicated they are performing a review to determine optimal numbers, locations and types of equipment in the Department's fleet to determine whether each asset is being properly utilized and whether other options might be available to meet operational requirements.

Recommendation 8.4

We recommend that acquisition and disposal decisions be better documented in both Departments, and be based on analysis of the best means of meeting operational needs.

8.32 In both Departments, decisions to replace fleet assets are primarily based on condition and expected future operating costs. Assets with the highest operating costs and in the poorest condition are replaced first. This is an informal process, and there is no documentation to support such decisions. In DNR, the decision to replace a vehicle is the responsibility of the fleet manager, who prioritizes all vehicle replacements. In TPW, each of its four districts is allocated approximately a quarter of the available fleet capital budget and replacement decisions are made on a district-by-district basis. The actual percentage of budget allocated can vary from year to year. We believe that a good fleet management system will base replacements on relative operational needs across the whole fleet, and not by department or division. Otherwise, there is risk that a fleet asset in one area will be replaced before one with a higher operating cost and poorer condition in another area.

8.33 Both TPW and DNR base purchase decisions on the purchase price of fleet assets. Estimated life-cycle costs such as operating and maintenance expenses are not considered. We believe that purchase decisions should be based on the full life-cycle costs of alternatives being considered in order to promote fuel efficiency and low maintenance costs.

8.34 There are Provincial polices which advise that environmental factors such as fuel efficiency and emission standards should be considered in the acquisition and use of fleet assets throughout government. We did not observe such considerations in vehicle purchases by TPW or DNR.

8.35 We examined the setting and approval of specifications for fleet asset tenders at both Departments. We found that at DNR, tender specifications are approved by a senior level of management. There is no formal approval of specifications at TPW. In our examination of tender documents, we noted a difference between the two departments with respect to minimum vehicle specifications relating to comfort accessories. We noted no standards at either Department for appropriate comfort accessories in vehicles. Management at TPW indicated they are attempting to set standards in this area.

8.36 We noted limited involvement of DNR staff in the evaluation of motor vehicle tenders, whereas TPW staff is actively involved. Accordingly, the evaluation of responses to DNR fleet tenders does not benefit from the knowledge of individuals who best understand the needs and operating conditions for the assets.

8.37 Neither Department has a formal post-acquisition evaluation process to determine whether fleet assets acquired are meeting the needs of their operators. Comments and suggestions are informally received by fleet management, but no mechanism exists to ensure these comments are considered during future tenders. We believe there should be a process to ensure any shortcomings in previous purchases are not repeated.

Recommendation 8.5

We recommend that life-cycle costs, environmental performance, and operational performance of similar fleet assets previously acquired be considered in purchase decisions.

Maintenance and Operations

8.38 Our audit of the fleet operations of the Department of Transportation and Public Works (TPW) and the Department of Natural Resources (DNR) included an assessment of the systems and practices used to safeguard fleet assets and ensure due regard for economy and efficiency in the maintenance and operation of fleet assets. We concluded that fleet assets are adequately safeguarded in TPW, but practices in DNR could be improved. We were unable to determine if fleet assets

are maintained and operated with due regard for economy and efficiency due to deficiencies in fleet management systems, analysis and documentation.

8.39 Safeguarding fleet assets - Neither TPW or DNR has a policy which addresses the storage and safeguarding of fleet assets. We found that fleet assets in TPW are generally stored in secure areas such as compounds and garages. Efforts are made to store assets on private property when equipment is in use at locations not owned by the Department. We found that storage and safeguarding of DNR's fleet assets varies from location to location. Some locations store fleet assets in secured buildings, while others store them in unsecured areas.

8.40 Both Departments insure fleet assets to mitigate potential losses. Insurance for all Provincial fleet assets is provided through a government-wide policy administered by the Risk Management Branch of the Department of Transportation and Public Works. Based on discussions with Branch management, we found that fleet asset insurance costs are being actively managed. In-house claims management, vehicle-related safety training, and monitoring and change of the structure and coverage of the policy occur. Insurance coverage is acquired without the services and related fees of an independent insurance broker. We noted that the Risk Management Branch is currently examining options, including self-insurance, to further reduce costs. We encourage the Risk Management Branch to continue its efforts in this area.

8.41 TPW has programs such as driver training and testing on heavy equipment to safeguard fleet assets. Training is also available in TPW for operators of light trucks and passenger vehicles, if requested. DNR has mandatory driver training for operators of enforcement and firefighting vehicles, and there are plans to expand the program to other vehicle operators. TPW has qualified driver trainers on staff, which provides another opportunity for the two departments to cooperate.

8.42 We assessed controls over maintenance supplies and spare parts at TPW and DNR. In both Departments we noted general compliance with the Provincial procurement policy, and regular inventory counts with follow-up of discrepancies. In DNR we identified control weaknesses relating to inadequate segregation of incompatible duties. Staff with responsibility for purchasing also has physical access to inventory and inventory records. We also observed that physical access to inventory, and related passwords and pass codes, are not adequately controlled. We also noted that there is no policy which addresses security issues. DNR management indicated that action has been taken to address some of our security concerns.

Recommendation 8.6

We recommend that the Department of Natural Resources improve safeguarding of its fleet assets, parts and supplies.

8.43 Maintenance - Neither TPW or DNR has a formal policy which addresses land-based fleet maintenance. However, there are established maintenance practices, and a clear understanding of maintenance responsibilities and the services to be provided, except for pooled fleet assets. There is a need to clarify responsibilities for preventative maintenance on fleet assets not assigned to individual operators. Fleet asset operators are relied upon to ensure preventative maintenance occurs on schedule. There is no monitoring to ensure it has taken place. Maintenance of aircraft is Federally regulated and is monitored by DNR staff.

8.44 We concluded that systems and practices in both Departments are inadequate to ensure proper maintenance is performed on land-based fleet assets. We noted incomplete vehicle log books, vehicles without log books, inadequate maintenance schedules and records, incomplete information on distance driven, and incomplete warranty information. We observed instances where routine maintenance was performed long after it was due according to maintenance schedules.

Recommendation 8.7

We recommend that Transportation and Public Works and Natural Resources develop a formal fleet maintenance policy and improve existing systems and practices to ensure vehicles are properly maintained. We further recommend that maintenance activities be adequately supported by appropriate documentation.

8.45 Economy and efficiency - fleet maintenance - Both TPW and DNR perform in-house maintenance, in addition to outsourcing maintenance to private companies. At DNR, all repairs and maintenance work in excess of $200 requires approval by the fleet manager, who determines where the repair will be completed. At TPW, light truck maintenance is typically outsourced, but there is an informal policy which requires mechanics to perform work on light trucks when time is available. DNR has some information indicating that outsourcing maintenance of vehicles is more expensive, whereas TPW has information indicating that outsourcing is more economical. Neither Department is able to provide a detailed analysis of the relative economies of performing fleet maintenance in-house versus by private companies.

8.46 Both TPW and DNR employ qualified mechanics to perform repairs and maintenance on fleet assets, but neither Department has established work standards for mechanic utilization, efficiency or effectiveness. DNR assessed its maintenance staff levels in January 2004 and determined they were inadequate to support current workloads. TPW has not recently assessed the appropriateness of maintenance staff levels, but there are plans to do so upon completion of a fleet asset review.

8.47 Economy and efficiency - fleet operations - Neither TPW nor DNR has established performance measures for monitoring the adequacy and productivity of its fleet assets. However, both Departments reassign vehicles to promote the use of vehicles

year-round and pool certain vehicles to increase asset utilization. DNR is moving towards a standard vehicle type to facilitate such reassignments. We saw instances at TPW where fleet asset utilization was increased by assigning assets to other government departments and agencies when they were not needed at TPW.

8.48 TPW tracks individual vehicle costs for purposes of allocating costs within the Department. Cost allocation is based on rental hours, which are the hours that a fleet asset is assigned to a project rather than the hours the asset is used. Whereas this measure may be appropriate for allocating costs, it does not provide a good measure with which to assess the adequacy and productivity of fleet assets. Tracking of kilometres driven or hours in operation would provide better information for such purposes.

8.49 TPW implemented the Federal government's Fleet Smart Program in 2003. The program trains fleet operators in practices designed to reduce fuel consumption. There has been no evaluation of its impact on Departmental costs. No such program exists in DNR.

8.50 We believe controls in both TPW and DNR are inadequate to ensure fleet assets are used only for authorized purposes. Neither Department performs audits of vehicle usage. Vehicle logs are not reviewed and there is insufficient analysis of equipment and activity reports. For example, there is no comparison of kilometres driven by time period or across similar fleet assets or operator positions. TPW does not track distance driven. DNR does track distance driven through its monthly vehicle reports, but there is no analysis of this data.

Recommendation 8.8

We recommend that Transportation and Public Works and Natural Resources obtain and use information necessary to monitor whether fleet assets are used efficiently and only for authorized purposes.

8.51 Personal use of departmental vehicles is not permitted at DNR. TPW authorizes selected employees to use fleet vehicles for personal use, provided they reimburse the Department at the rate of 21.3 cents per kilometre. This rate is set in Provincial policy. TPW management believes it is based on an estimate of the per-kilometre cost to operate vehicles, and does not include overhead costs such as the amortization of the cost to purchase the vehicle. The Provincial rate for reimbursement for work-related use of employee vehicles is 34 cents per kilometre. We believe government should require employees to reimburse it for the full cost of personal use of Provincial fleet assets when such use is authorized.

Recommendation 8.9

We recommend that government require reimbursements for personal use of government vehicles based on full operating and capital costs.

8.52 The Canada Revenue Agency has defined employee use of employer-owned vehicles as a taxable benefit, even in circumstances where the employee may be required to return to work after regular working hours, such as for 'on call or standby duty.' An exception to this rule is where an employee is required to report to a worksite that is not their regular place of work. TPW has authorized selected employees to take fleet vehicles to their place of residence when the employees are on call or standby. A review by TPW staff identified five instances where such authorizations were not documented. The Department has defined the practice as 'business use' and the employees are not required to reimburse the Department. The Department does not keep records of such practices, so we could not determine the extent. Management indicated that the practice is advantageous to the Department, but is unable to provide analysis to support this assertion. The Department does not record this usage as a taxable benefit on employee T4 statements. The Department could not support that it is in compliance with the Federal Income Tax Act. We believe this practice should be reviewed by experts in tax law and that the Income Tax Act should be complied with.

Recommendation 8.10

We recommend that Transportation and Public Works document the value in permitting certain unreimbursed use of vehicles by staff who are on-call or standby. TPW should also submit for expert analysis its practices in this area to ensure full compliance with the Income Tax Act.

8.53 Prior to April 1, 2004, Provincial and municipal-owned vehicles with Provincially-restricted licence plates were subject to a one-time $15 registration fee and $5 plate fee. Subsequently, all Provincial and municipal government-owned vehicles with restricted plates were required to be registered annually or bi-annually, depending on the class of vehicle. The process followed by TPW and DNR to renew vehicle licences is essentially the same as the process used by individuals. A form must be completed for each vehicle and delivered to Access Nova Scotia locations along with payment of a fee based on vehicle class. The change in process increased workloads and caused delays in putting fleet equipment into use at both TPW and DNR. In contrast, for Department of National Defense vehicles with Federal licence plates, the Government of Canada provides the Province's Registry of Motor Vehicles with a list of vehicles currently in the Province, and the Registry prepares one invoice based on the list. An annual lump-sum payment is remitted to the Province by the Federal Government. We believe there could be cost-savings if there was a similar process for TPW and DNR.

Recommendation 8.11

We recommend that the current registration process be reviewed to determine if there is an opportunity to improve the efficiency of registering Provincial vehicles with the Registry of Motor Vehicles.

8.54 We found that both TPW and DNR properly dispose of waste products from maintenance processes in accordance with Provincial environmental policies. The Departments use reconditioned parts, recycle parts from retired fleet assets and use bulk oil purchasing to reduce waste. We also noted that Provincial occupational health and safety (OH&S) programs address certain environmental issues related to fleet operations and TPW has expanded its own OH&S program to include environmental audits. This expanded program, referred to as the Health, Safety and Environment Program, only applies to TPW.

8.55 Classification of expenses - During our audit of fleet operations in the Department of Natural Resources, we reviewed selected fleet maintenance expense accounts and identified approximately $45,000 in expenses which were inappropriately charged to fleet operations. We were advised that staff had been instructed to charge these expenses to fleet operations due to availability of unspent budget allocations for the year. Such accounting practices do not provide for accurate financial reporting and are inappropriate.

Recommendation 8.12

We recommend that expenses of the Department of Natural Resources be recorded in appropriate general ledger accounts, and that the Department's budget have no role in how expenses are classified.

Fuel Storage and Consumption

8.56 The Department of Transportation and Public Works (TPW) and the Department of Natural Resources (DNR) maintain fleet fuel supplies at various locations throughout the Province. In addition, purchase cards are used to purchase fuel from private service stations.

8.57 Our audit examined systems and practices used to manage and maintain fuel supplies, as well as to ensure compliance with environmental protection legislation and regulations, and due regard for economy and efficiency. We identified instances of non-compliance with applicable regulations and the Provincial procurement policy, as well as inadequate control over fuel expenses and consumption.

8.58 Fuel storage and safeguards - Both TPW and DNR store fuel for use in vehicles, and DNR stores fuel for its aircraft. The storage of fuel in bulk storage tanks is governed by the Province's Petroleum Management Regulations, which require fuel storage tanks to be regularly monitored, inspected and properly maintained. Aviation Fuel is also regulated by the Dangerous Goods Management Regulations.

8.59 TPW has an environmental management system to address the requirements of the Petroleum Management Regulations. This system operates only within TPW, and does not extend to DNR or any other government department. We reviewed the

system and concluded that it does not ensure full compliance with the Petroleum Management Regulations, such as the regulatory requirement for daily testing of fuel supplies. In addition, we found that staff was unaware of the system in three of the five locations we examined at TPW.

8.60 DNR has a policy for bulk storage of aviation fuel, but it does not ensure full compliance with the Dangerous Goods Management Regulations. DNR does not have a policy which addresses the bulk storage of motor fuels.

8.61 We examined bulk fuel storage practices at five locations for TPW and four locations for DNR. We reviewed systems in place to ensure fuel is properly stored and safeguarded. We found that only one location, belonging to DNR, is in full compliance with the Petroleum Management Regulations. We also observed instances of non-compliance with the Province's Dangerous Goods Management Regulations at DNR. We were told that bulk storage tanks are regularly inspected and properly maintained, but there are no records to support this assertion. We found that access controls for bulk storage tanks are adequate at all locations examined, however we identified and recommended specific areas for improvement. DNR management indicated that action is being taken to address our concerns.

8.62 Roles and responsibilities related to fuel storage are not clearly assigned and communicated. We believe formal assignment of responsibilities could improve accountability for safeguarding of fuel supplies and increase the level of compliance with Provincial regulations.

Recommendation 8.13

We recommend that Transportation and Public Works and Natural Resources ensure that bulk fuel storage for fleet operations complies with Provincial regulations. Documentation for inspection and maintenance of storage tanks should be improved. Responsibilities for fuel storage should be clearly assigned and communicated.

8.63 Fuel tank replacement - Environmental contamination is a significant risk related to fuel storage. The Petroleum Management Regulations require underground fuel storage tanks to be replaced after 15 years of use. We noted two storage tanks at TPW which were not replaced within this timeframe.

8.64 We were also made aware of environmental contamination issues within TPW. TPW's Environmental Services Group is responsible for environmental site assessments and the clean-up of contaminated sites within the Department. Staff of Environmental Services Group estimate they have performed environmental site assessments on two-thirds of 80 base locations, and almost all of the sites have some degree of environmental contamination. Staff stated that ten sites have been cleaned-up and six sites are in the process of being remediated. TPW is prioritizing the sites and conducting remedial action as funding becomes

available. TPW plans to remediate three sites in 2005-06 at an estimated cost of approximately $500,000. The total cost to address all contaminated sites has not been estimated. We encouraged the Department to complete assessments of all of its sites and develop a remediation plan based on the results of the assessments.

8.65 Environmental Services staff at TPW is not explicitly required to inform the Department of Environment and Labour of the results of its environmental site assessments or the status of its clean-up activities, unless the provisions of Provincial emergency spill regulations apply or an adverse effect is or may be caused. This was confirmed by Department of Environment and Labour staff, who indicated that measures are underway to amend the Environment Act to require the reporting of all emergency spills, as well as sites that were previously contaminated.

8.66 Staff of TPW's Environmental Services Group indicated that they will perform assessments for other government departments if requested to do so. DNR was unaware of this service and has not requested any environmental site assessments. As a result, DNR has no authoritative information on the condition of its fuel storage sites. We believe there should be requirements for government-wide inspection of sites at risk for environmental contamination, and any contamination requiring remediation should be dealth with in a timely manner. There should also be adequate communications to ensure all government departments and agencies are aware of TPW's environmental site assessment services.

Recommendation 8.14

We recommend the preparation and implementation of a government-wide policy for the storage and handling of fuel. The policy should be adequately communicated and address all requirements of the Petroleum Management Regulations and Dangerous Goods Management Regulations. Environmental site assessments should be performed on all fuel storage sites operated by the Provincial government, and contaminated sites requiring remediation should be remediated in a timely manner.

8.67 Procurement - We found that TPW complies with the Provincial Procurement Policy in the purchase of bulk fuel, but not all DNR purchases are in compliance. DNR sole-sources its supply of drum aviation fuel. The Provincial Procurement Policy permits sole-sourcing in specific circumstances. However, DNR is not in compliance with sole-sourcing approval and reporting provisions of the policy with respect to drum aviation fuel.

Recommendation 8.15

We recommend that the Department of Natural Resources comply with sole-sourcing approval and reporting provisions of the Provincial Procurement Policy.

8.68 Control of fuel consumption – In both TPW and DNR, fuel costs are charged to the division or branch to which a fleet asset is assigned. Responsibility for controlling fuel expenses and consumption is at the division or branch level. We found that some divisions analyze and monitor fuel expenses, while others do not. In those that do, processes vary from division to division.

8.69 Systems and practices for controlling fuel expenses and consumption are inadequate in both Departments. The Departments do not ensure that all recorded fuel expenses are incurred for government-related activities, and there are inadequate measures to detect excessive fuel usage due to poor operating and maintenance practices. Suggested improvements include regular comparisons of kilometres driven to fuel purchased, tracking and verifying kilometres driven, random audits of fuel expenses, comparison of fuel expenses by vehicle type and operator position, as well as the establishment of fuel consumption standards and comparison of actual expenses to these standards.

8.70 Fuel, other than bulk purchases, is acquired using Provincial fleet credit cards. The Provincial policy restricts the use of fleet credit cards to fuel purchases and minor repairs. The Province, through the financial institution which issues the card, has also established restrictions which limit where the card can be used. We noted that guidelines on the use of fleet credit cards are communicated to employees and there is a Provincial policy related to appropriate use of the fleet credit cards. These policies are currently being reviewed and updated.

Recommendation 8.16

We recommend measures be taken by Transportation and Public Works and Natural Resources to improve controls over fuel expenses and consumption.

CONCLUDING REMARKS

8.71 Fleet management in the Nova Scotia government is not coordinated across the Provincial fleet. Each government department is responsible for the management of the fleet assets it employs. The fleet management practices within the Departments of Transportation and Public Works and Natural Resources vary significantly. We noted the use of different information systems, under-utilization of existing systems, weaknesses in the systems, and opportunity for better coordination and cooperation between the two Departments. The Departments of Transportation and Public Works and Natural Resources should investigate ways of combining or coordinating fleet management operations in order to promote economy, efficiency and better control over government fleet assets. In doing so, consideration should be given to including fleet operations of other government departments and agencies.

8.72 We observed weaknesses in security and control over fleet assets, supplies, spare parts and fuel. Some of the weaknesses relating to bulk fuel storage are in contravention of Provincial regulations. We observed opportunities to improve systems and practices in areas such as fleet maintenance, procurements, disposals and fuel usage which could lead to more economical and efficient fleet operations. We also believe there is a need for expansion of environmental assessment of bulk fuel sites beyond the Department of Transportation and Public Works.

Fleet Assets

Exhibit 8.1

	Transportation and Public Works				Natural Resources			
Asset Type	# of units	% of Departmental fleet	Average Age (years)	Acquisition Cost	# of units	% of Departmental fleet	Average Age (years)	Acquisition Cost
Light trucks & passenger vehicles	190	14%	5	$5,236,000	205	37.1%	9	n/a
Heavy equipment	1,101	81.1%	10	$81,369,000	70	12.7%	20	n/a
Aircraft	-	-	-	-	5	0.9%	18	n/a
Other vehicles and equipment [1]	66	4.9%	13	$3,323,000	273	49.3%	n/a	n/a
Total	**1,357**	**100%**		**$89,928,000**	**553**	**100%**		**n/a**

n/a – information not available.

Note 1 – includes fleet assets such as snowmobiles, all terrain vehicles, trailers, air compressors and other small equipment.

Exhibit 8.2

Transportation and Public Works and Natural Resources
Location of Department Facilities

DEPARTMENT OF NATURAL RESOURCES' RESPONSE

The Office of the Auditor General has completed its joint audit of the fleets of the Department of Natural Resources (DNR) and the Department of Transportation and Public Works (TPW). In response to the audit findings, the Department of Natural Resources has established a Fleet Audit Review Team to consider the audit findings and determine appropriate responses to the findings.

We appreciate this opportunity to respond to the audit and its recommendations.

Recommendation 8.1

We recommend that Transportation and Public Works and Natural Resources investigate ways of coordinating their fleet management operations in order to promote economy and efficiency. In doing so, consideration should be given to including fleet operations of other government departments and agencies.

Recommendation 8.3

Government should review the policy on acquisition of fleet assets and assess the reasonableness of the $25,000 limit and/or clarify the application of the limit to the different vehicles employed in Provincial fleet operations.

Senior Department of Natural Resources staff will continue to meet with senior Department of Transportation and Public Works staff to identify and support taking advantage of opportunities to promote efficiencies. Although there are significant differences in the composition and use of the fleets from the two departments, particular attention will be given to establishing fleet policies, acquisitions, potential for shared services and training. Development of fleet policies which apply to both DNR and TPW may also have potential for broader corporate applications.

Recommendation 8.2

We recommend that the Department of Natural Resources fleet management branch review and assess its current information needs and evaluate the ability of current systems to meet them. The Department should also assess the need for additional staff training in fleet management systems and practices.

The DNR Audit Review Team will carefully assess the fleet information requirements needed to effectively manage the fleet and recommend appropriate action. Technical limitations and funding delayed the connection of Regional offices and operations to the government network. The DNR Shubenacadie offices were connected to the government network in May 2005. We note that the operating costs for the aviation fleet, including the costs for parts and fuel are tracked by asset, however, labour costs are not currently tracked by asset.

Recommendation 8.4

We recommend that acquisition and disposal decisions be better documented in both departments, and be based on analysis of the best means of meeting operational needs.

The Audit Review Team will consider fleet acquisition and disposal decisions and processes in conjunction with the audit recommendation and related comments. Although DNR field staff are not involved in the annual evaluations of vehicle tenders, field staff input is considered in periodic fleet reviews conducted by DNR (i.e., DNR Vehicle Fleet Report, January 16, 2004). The DNR Audit Review Team will examine the need to augment the opportunities for field staff input.

Recommendation 8.5

We recommend that life-cycle costs, environmental performance, and operational performance of similar fleet assets previously acquired be considered in purchase decisions.

Recommendation 8.6

We recommend that the Department of Natural Resources improve safeguarding of its fleet assets, parts and supplies.

The DNR Audit Review Team will review current systems in light of the audit recommendations and comments, and provide recommendations to senior management concerning the appropriate application of existing systems and practices for safeguarding fleet assets; and the need to acquire new systems to ensure fleet storage and protection are adequate and consistent across all DNR locations.

Recommendation 8.7

We recommend that Transportation and Public Works and Natural Resources develop a formal fleet maintenance policy and improve existing systems and practices to ensure vehicles are properly maintained. We further recommend that maintenance activities be adequately supported by appropriate documentation.

DNR will expand the Operations Manual to include a separate section dedicated to fleet policy. The audit included interviews with field staff but did not include interviews with DNR Regional supervisors who have significant responsibilities for local fleet management. The audit results have identified the need to ensure further staff training and information to ensure better awareness of fleet policies and procedures among all DNR fleet users.

The DNR Audit Review Team will review the current practices for the collection and recording of fleet maintenance information and the use of this information in the management of the fleet. The Team will make recommendations on any opportunities to use this information to increase the efficiency of fleet management.

Recommendation 8.11

We recommend that the current registration process be reviewed to determine if there is an opportunity to improve the efficiency of registering provincial vehicles with the Registry of Motor Vehicles.

DNR is consulting with Service Nova Scotia and Municipal Affairs (SNSMR) to determine

if one annual provincial payment could be introduced. SNSMR staff have responded to the DNR inquiry and indicated that they have previously explained to staff from the Office of the Auditor General that there is no plan to change the current system for registering provincial vehicles.

Recommendation 8.12

We recommend that expenses of the Department of Natural Resources be recorded in appropriate general ledger accounts, and that the Department's budget have no role in how expenses are classified

The Department works to ensure that expenses are charged to the appropriate accounts. As a result of the audit, additional communication with staff is occurring to prevent exceptions to this standard in future.

Recommendation 8.13

We recommend that Transportation and Public Works and Natural Resources ensure that bulk fuel storage for fleet operations complies with Provincial regulations. Documentation for inspection and maintenance of storage tanks should be improved. Responsibilities for fuel storage should be clearly assigned and communicated.

DNR is working with the Procurement Office to address the procurement issues identified in the audit. Fuel sheds are being acquired for locations where fuel was stored outside. All bulk fuel tanks have been checked to ensure that they are locked at both the fillers and dispensers. DNR has contacted all bulk tank locations to ensure tanks are brought into compliance if they were not at the time of the audit.

DNR has requested copies of the Provincial Petroleum Storage Standards from the Department of Environment and Labour. DNR is also confirming that all tanks are registered with district Environment and Labour offices. DNR is also obtaining current copies of the Fire Codes from the Fire Marshall's office to ensure compliance.

Recommendation 8.14

We recommend the preparation and implementation of a government-wide policy for the storage and handling of fuel. The policy should be adequately communicated and address all requirements of the Petroleum Management Regulations and Dangerous Goods Management Regulations. Environmental site assessments should be performed on all fuel storage sites operated by the Provincial government, and contaminated sites requiring remediation should be remediated in a timely manner.

We note that all DNR underground tanks are compliant with the Petroleum Management Regulations requirement to replace tanks after 15 years.

Recommendation 8.15

We recommend that the Department of Natural Resources comply with sole-sourcing approval and reporting provisions of the Provincial Procurement Policy.

DNR has contacted staff at the Procurement office to ensure that all fuel purchases are tendered unless they are deemed to meet the provisions for sole sourcing.

The Department of Natural Resources, through its Fleet Audit Review Team, is carefully considering the results of the audit. The audit and its recommendations will be used to support the Department's ongoing work towards continuous improvement of its operations. As noted in DNR's comments, action has already occurred in some areas.

DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS' RESPONSE

Thank you for your report of May 2005 outlining the recent audit of our fleet operations. The findings of the report and the discussions with your staff on their recommendations have certainly been helpful and will serve as a basis for future improvements to the overall management of our fleet. Upon our initial review of the report, we find that we are in general agreement with the recommendations as put forward.

We are pleased that the audit has found that the management information system at our department is adequate to provide the information required to manage the department's fleet, however we certainly acknowledge that there are a number of weaknesses and areas where changes or improved coordination between departments would be beneficial.

In response, the department will be undertaking a more detailed review of the recommendations pertaining to Transportation and Public Works, and will undertake to make improvements to our existing systems, policies, and management practices that will promote economy, efficiency, and stronger control of our fleet assets and operations.

In closing, I would like to acknowledge the cooperation of your office and your staff during the course of this review.

Appendix

I AUDITOR GENERAL ACT - SECTIONS 8, 9, 15, 17

AUDITOR GENERAL ACT

SECTION 8

The Auditor General shall examine in such manner and to the extent he considers necessary such of the accounts of public money received or expended by or on behalf of the Province, and such of the accounts of money received or expended by the Province in trust for or on account of any government or person or for any special purposes or otherwise, including, unless the Governor in Council otherwise directs, any accounts of public or other money received or expended by any agency of government appointed to manage any department, service, property or business of the Province, and shall ascertain whether in his opinion

(a) accounts have been faithfully and properly kept;

(b) all public money has been fully accounted for, and the rules and procedures applied are sufficient to secure an effective check on the assessment, collection and proper allocation of the capital and revenue receipts;

(c) money which is authorized to be expended by the Legislature has been expended without due regard to economy or efficiency;

(d) money has been expended for the purposes for which it was appropriated by the Legislature and the expenditures have been made as authorized; and

(e) essential records are maintained and the rules and procedures applied are sufficient to safeguard and control public property.

SECTION 9

(1) The Auditor General shall report annually to the House of Assembly on the financial statements of the Government that are included in the public accounts required under Sections 9 and 10 of the *Provincial Finance Act*, respecting the fiscal year then ended.

(2) The report forms part of the public accounts and shall state

(a) whether the Auditor General has received all of the information and explanations required by the Auditor General; and

(b) whether in the opinion of the Auditor General, the financial statements present fairly the financial position, results of operations and changes in financial position of the Government in accordance with the stated accounting policies of the Government and as to whether they are on a basis consistent with that of the preceding year.

(3) Where the opinion of the Auditor General required by this Section is qualified, the Auditor General shall state the reasons for the qualified opinion.

SECTION 9A

(1) The Auditor General shall report annually to the House of Assembly and may make, in addition to any special report made pursuant to this Act, not more than two additional reports in any year to the House of Assembly on the work of the Auditor General's office and shall call attention to every case in which the Auditor General has observed that

(a) any officer or employee has wilfully or negligently omitted to collect or receive any public money belonging to the Province;

(b) any public money was not duly accounted for and paid into the Consolidated Fund of the Province;

(c) any appropriation was exceeded or was applied to a purpose or in a manner not authorized by the Legislature;

(d) an expenditure was not authorized or was not properly vouched or certified;

(e) there has been a deficiency or loss through fraud, default or mistake of any person;

(f) a special warrant, made pursuant to the provision of the *Provincial Finance Act*, authorized the payment of money; or

(g) money that is authorized to be expended by the Legislature has not been expended with due regard to economy and efficiency.

(2) The annual report of the Auditor General shall be laid before the House of Assembly on or before December 31st of the calendar year in which the fiscal year to which the report relates ends or, if the House is not sitting, it shall be filed with the Clerk of the House.

(3) Where the Auditor General proposes to make an additional report, the Auditor General shall send written notice to the Speaker of the House of Assembly thirty days in advance of its tabling or filing pursuant to subsection (2).

(4) Whenever a case of the type described in clause (1)(a), (b) or (e) comes to the attention of the Auditor General, the Auditor General shall forthwith report the circumstances of the case to the Minister.

(5) The Auditor General shall, as soon as practical, advise the appropriate officers or employees of an agency of Government of any significant matter discovered in an audit.

(6) Notwithstanding subsection (1), the Auditor General is not required to report to the House of Assembly on any matter that the Auditor General considers immaterial or insignificant.

SECTION 9B

(1) The Auditor General shall annually review the estimates of revenue used in the preparation of the annual budget address of the Minister of Finance to the House of Assembly and provide the House of Assembly with an opinion on the reasonableness of the revenue estimates.

(2) The opinion of the Auditor General shall be tabled with the budget address.

SECTION 15

Notwithstanding any provision of this Act, the Auditor General may, and where directed by the Governor in Council or the Management Board shall, make an examination and audit of

(a) the accounts of an agency of government; or

(b) the accounts in respect of financial assistance from the government or an agency of the government of a person or institution in any way receiving financial assistance from the government or an agency of government,

where

(c) the Auditor General has been provided with the funding the Auditor General considers necessary to undertake the examination and audit; and

(d) in the opinion of the Auditor General, the examination and audit will not unduly interfere with the other duties of the Office of the Auditor General pursuant to this Act,

and the Auditor General shall perform the examination and audit and report thereon.

Section 17

(1) Where the Governor in Council pursuant to this Act or any other Act has directed that the accounts of public money received or expended by any agency of government shall be examined by a chartered accountant or accountants other than the Auditor General, the chartered accountant or accountants shall

(a) deliver to the Auditor General immediately after the completion of the audit a copy of the report of findings and recommendations to management and a copy of the audited financial statements relating to the agency of government; and

(b) make available to the Auditor General, upon request, and upon reasonable notice, all working papers, schedules and other documentation relating to the audit or audits of the agency accounts.

(2) Notwithstanding that a chartered accountant or accountants other than the Auditor General have been directed to examine the accounts of an agency of government, the Auditor General may conduct such additional examination and investigation of the records and operations of the agency of government as he deems necessary.